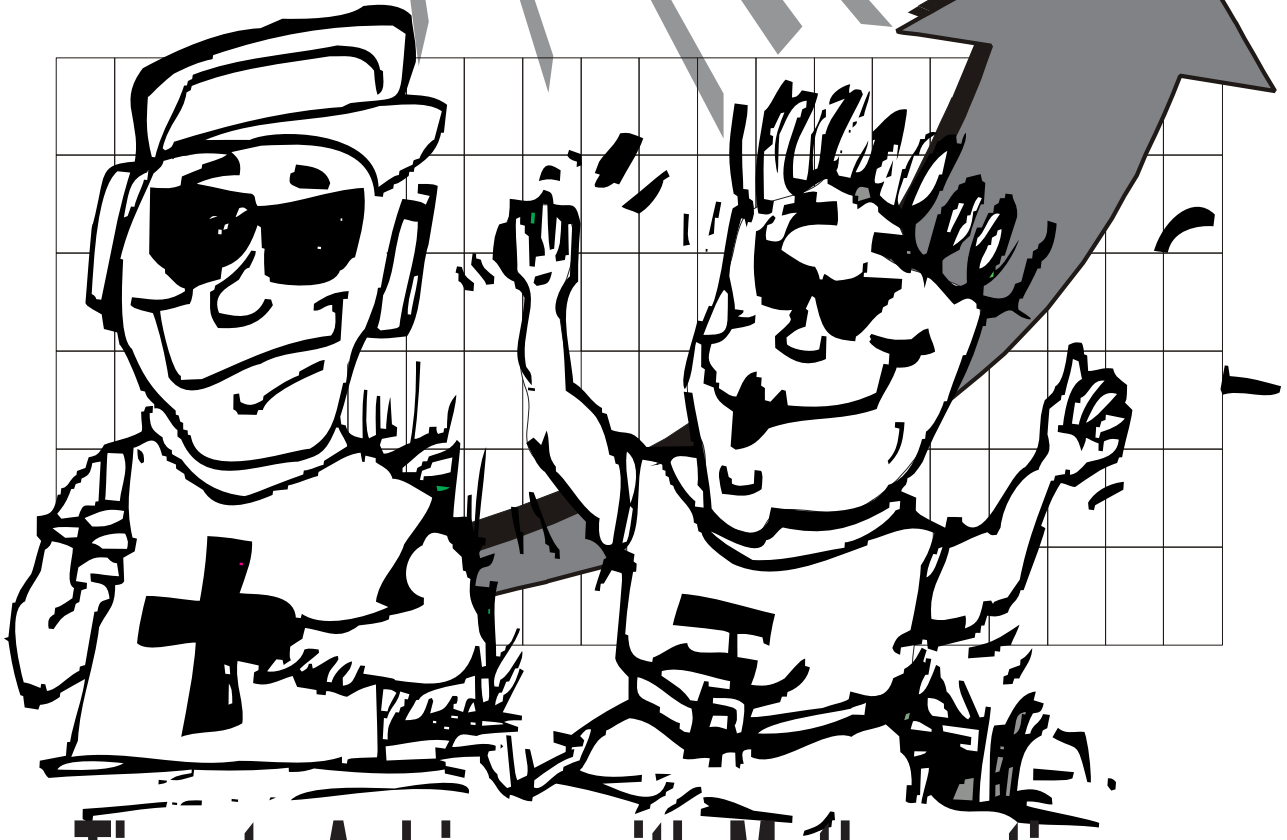
Book 1



Time to Achieve with Mathematics

What Is Covered In This Book?

Objective 1, Number and Algebra

- Write and solve problems involving whole, decimal numbers, percentages and fractions using a range of strategies and with an appreciation for the sensibleness of the answer.
- Order and understand placement of digits in whole numbers, decimal numbers and fractions.
- Recall basic multiplication and division facts. Recognise that numbers can be partitioned and combined using addition and or multiplication.
- Express fractions as decimals, decimals as percentages and vise versa.
- Explain the meaning of negative and positive numbers.
- Recognise relationships and calculate further using any rule formed.
- Be able to correctly use symbols, and notation to represent linear relationships and then to solve unknowns in any equations formed.
- Sketch and use graphs to illustrate relationships.
- Develop skills and confidence in the language of maths. Develop characteristics of logical and systematic thinking which can then be applied to mathematical problems and to other areas of learning.

Objective 2, Geometry and Measurement

- Recognise relations and geometrical properties in two and three dimensions.
- Represent objects with drawings and models e.g. by being able to construct triangles, circles and polyhedra.
- Recognise and define plane shapes, prisms, pyramids, cones and spheres.
- Draw, interpret and specify locations using bearings and simple map scales.
- Describe and design patterns in terms of reflection, rotation, translation and enlargement.
- Measure using correct units for length, mass, volume, temperature and money. Read aspects of both calender time and clock time.
- Use mathematical instruments and measuring devices with confidence and competence.
- Understand and calculate metric measures such as area, perimeter and volume of triangular, rectangular and circular objects.

Objective 3, Statistics

- Collect and sort data into categories.
- Represent the findings of a statistical enquiry on an appropriate graph, and identify any patterns or trends within and between the data sets.
- Interpret and present data, predict and calculate, organise and analyse.
- Evaluate the effectiveness of different displays for any sets of data.
- Plan and present a statistical experiment using appropriate graphs.
- Estimate possible outcomes for a sequence of events.
- Investigate chance situations by comparing trial results with predictions, recognising variation and using simple fractions to describe probabilities.

-HOW MUCH DO YOU GROW IN ONE YEAR?

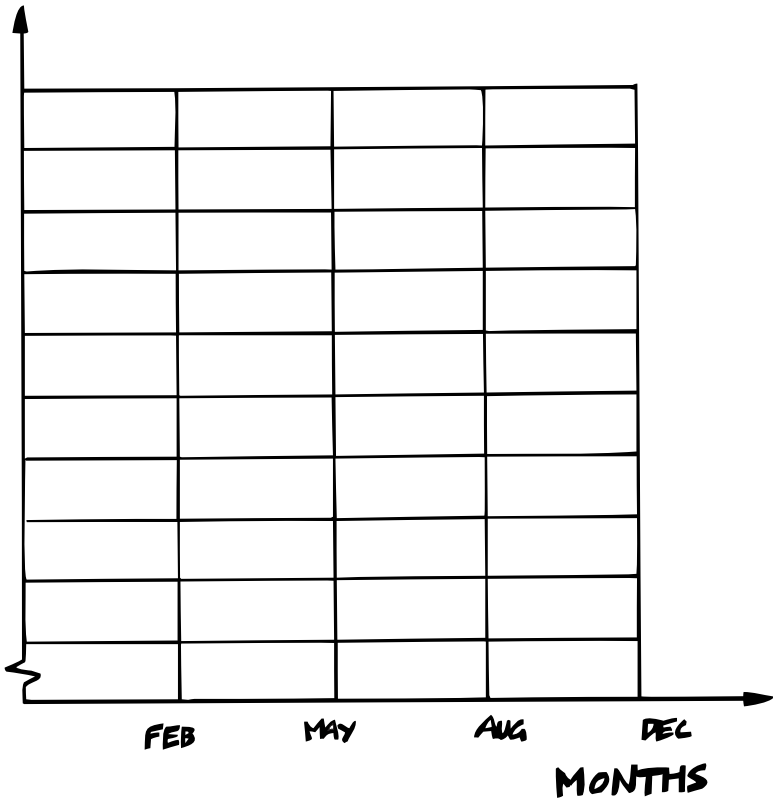
1. Record your height and the height of a friend.
2. Do your survey in February, May, August and December.
3. After each measurement record your results on the graph and chart below!

RESULTS CHART

NAME	_____	_____
HEIGHTS - FEB	_____	-FEB _____
- MAY	_____	-MAY _____
- AUG	_____	-AUG _____
- DEC	_____	-DEC _____
- TOTAL GROWTH THIS YEAR	_____ cm	_____ cm

HEIGHTS GRAPH

- DRAW A LINE BETWEEN EACH CHANGE OF HEIGHT.
- USE DIFFERENT COLOURS FOR EACH PERSON!



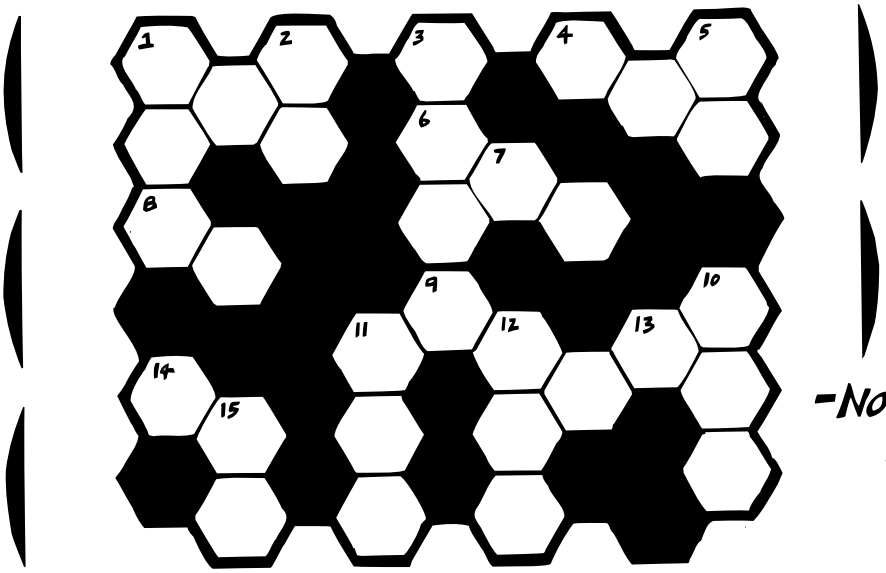
- ENSURE YOUR MEASUREMENTS ARE ACCURATE (NO STANDING ON TIP-TOES!)

HEXANUMBER

Write these numbers into the Hexanumber.

- 1 ONE HUNDRED AND ELEVEN
- 2 TWELVE
- 3 TWO THOUSAND SIX HUNDRED AND NINETY SEVEN
- 5 THIRTY TWO
- 10 NINE HUNDRED AND SIXTY SIX
- 11 THREE HUNDRED AND ONE
- 12 FIVE HUNDRED AND SEVEN
- 15 TWENTY TWO

- 1 ONE HUNDRED AND TWO
- 4 SIX HUNDRED AND EIGHTY TWO
- 6 SIX HUNDRED AND FORTY FOUR
- 8 TEN
- 9 SEVEN HUNDRED AND FIFTY FIVE
- 13 SIXTEEN
- 14 THIRTY TWO



-NOW WRITE THE NUMBERS LEFT AS WORDS!

2 _____

5 _____

7 _____

9 _____

10 _____

Put these boxes in the right order so that the numbers go from smallest to largest.

E	N	M	I	O	A	N	T	L	O	E	G	S
15	3	12	9	2	106	17	8	1	23	55	6	24

"WHAT DID THE BEACH SAY WHEN THE TIDE CAME IN?"

LEVEL 1

2 + 3 = ___	4 + 4 = ___	8 + 2 = ___	6 + 5 = ___	7 + 2 = ___	9 + 4 = ___	7 + 6 = ___
6 + 8 = ___	9 + 5 = ___	2 + 6 = ___	4 + 3 = ___	3 + 3 = ___	5 + 8 = ___	6 + 6 = ___
4 + 9 = ___	5 + 5 = ___	2 + 8 = ___	1 + 9 = ___	8 + 8 = ___	3 + 9 = ___	4 + 1 = ___

LEVEL 2

3 2 + 2 ___	1 7 + 1 ___	5 0 + 4 ___	8 2 + 2 ___	6 4 + 3 ___	5 4 + 6 ___	3 2 + 7 ___
5 4 + 2 ___	8 7 + 3 ___	5 6 + 5 ___	8 3 + 6 ___	4 9 + 7 ___	6 6 + 7 ___	8 5 + 7 ___

LEVEL 3

42 + 37 ___	46 + 23 ___	23 + 11 ___	12 + 12 ___	15 + 13 ___	18 + 11 ___	14 + 15 ___

14 + 13 = ____ 12 + 6 = ____ 15 + 33 = ____ 35 + 24 = ____ 17 + 21 = ____

LEVEL 4

32 20 16 ___	27 12 20 ___	40 21 10 ___	37 21 21 ___	63 12 14 ___	32 15 12 ___	21 16 12 ___

30 + 12 + 15 = ____ 42 + 22 + 15 = ____ 16 + 12 + 21 = ____

MORE ADDITION

THE EXPERTS AGREE...
...YOU MUST PRACTICE!

4 + 2 = ___	7 + 2 = ___	8 + 6 = ___	3 + 5 = ___	8 + 0 = ___	6 + 3 = ___
2 + 2 = ___	5 + 6 = ___	6 + 5 = ___	5 + 5 = ___	9 + 2 = ___	6 + 4 = ___
8 + 8 = ___	6 + 8 = ___	9 + 5 = ___	4 + 9 = ___	3 + 1 = ___	4 + 1 = ___
7 + 8 = ___	4 + 9 = ___	3 + 7 = ___	5 + 3 = ___	7 + 4 = ___	8 + 2 = ___
9 + 3 = ___	7 + 0 = ___	9 + 7 = ___	3 + 8 = ___	6 + 1 = ___	5 + 8 = ___
15 + 5 = ___	18 + 2 = ___	4 + 5 = ___	12 + 6 = ___	11 + 7 = ___	15 + 3 = ___
16 + 7 = ___	11 + 6 = ___	11 + 9 = ___	19 + 6 = ___	16 + 7 = ___	14 + 8 = ___
19 + 3 = ___	15 + 8 = ___	8 + 11 = ___	18 + 0 = ___	9 + 16 = ___	13 + 4 = ___
9 + 12 = ___	18 + 7 = ___	16 + 6 = ___	15 + 7 = ___	17 + 4 = ___	13 + 9 = ___
12 + 4 = ___	15 + 8 = ___	19 + 4 = ___	17 + 5 = ___	12 + 8 = ___	18 + 7 = ___

5 5 + 3 ___	4 6 + 3 ___	7 5 + 7 ___	3 8 + 3 ___	2 7 + 6 ___	1 7 + 4 ___	9 8 + 2 ___
8 6 + 8 ___	4 3 + 2 ___	7 9 + 5 ___	6 8 + 4 ___	2 9 + 7 ___	3 5 + 8 ___	6 4 + 9 ___
2 2 5 6 + 3 ___	5 2 6 6 + 4 ___	4 8 6 8 + 3 ___	7 7 3 7 + 2 ___	5 4 1 6 + 2 ___	9 0 3 3 + 1 ___	7 8 6 6 + 9 ___
6 1 7 5 + 2 ___	9 3 7 1 + 5 ___	6 7 4 3 + 8 ___	3 0 7 8 + 5 ___	9 8 3 5 + 4 ___	8 8 7 4 + 1 ___	8 5 7 6 + 4 ___

COMPLETE THE ADDITION BOXES

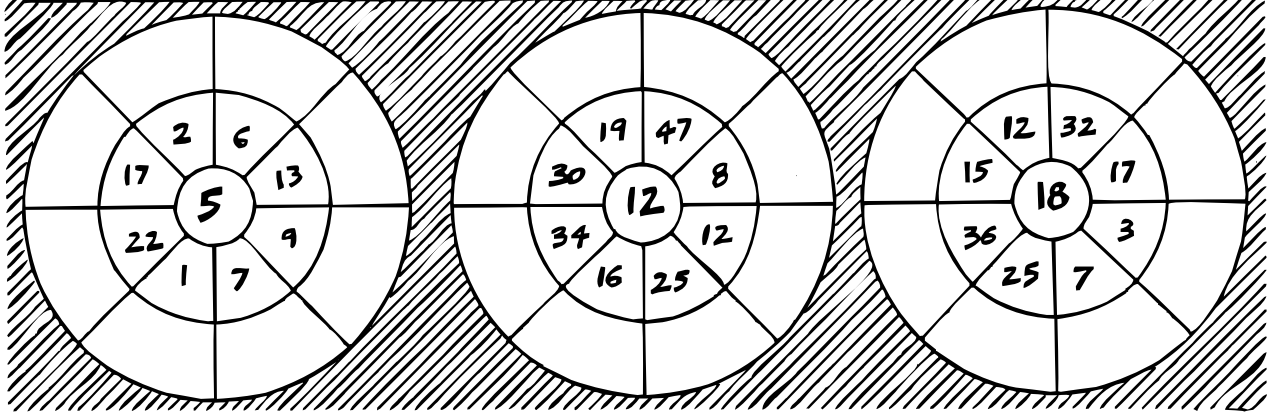
+	5	7	3	8
2				
6				
9				
4				

+	23	25	26	24
15				
16				
17				

+	4	5	7
5			
2			

+	12	33	24
16			
25			

NOW COMPLETE THE OUTSIDE RING OF EACH CIRCLE BY ADDING THE NUMBER IN THE CENTRE, TO THE NUMBER IN EACH SEGMENT!



ADD 6 TO EACH OF THESE NUMBERS

1	8	7	6	13	19	27

Find a place for each card. (You can only use each card once.)

3 6 17 2 19 5 9 14 18 16 7

□ + 4 = 11 □ + 3 = 8 13 + 1 = □ 12 + 6 = □

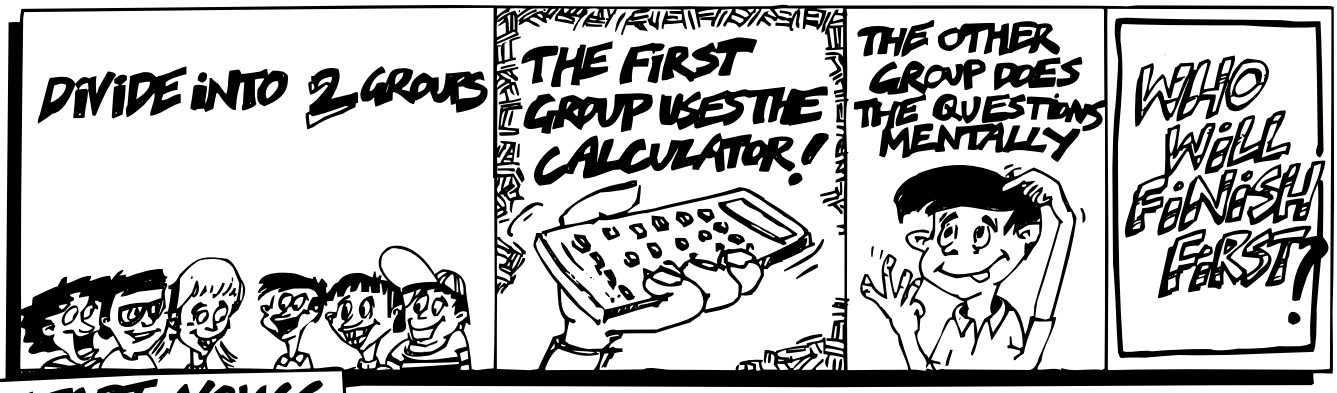
10 + 9 = □ □ + 6 = 12 7 + 9 = □ □ + 8 = □

□ + □ = 5

- IT'S TIME TO...

- BEAT THE CALCULATOR!

- AND INCREASE YOUR ADDITION SKILLS



START NOW!

4 6 + 2	6 7 + 5	7 3 + 3	8 5 + 4	6 7 + 8	9 2 + 5	6 4 + 3	8 7 + 4
4 7 7 + 6	8 8 4 + 5	3 2 5 + 7	6 4 7 + 7	9 5 2 + 2	7 4 4 + 1	6 6 9 + 9	3 8 4 + 2

- Which group finished first? _____

- Groups now swap over and try again.

7 4 + 7	3 2 + 8	5 3 + 4	7 7 + 5	6 2 + 8	3 4 + 2	6 1 + 6	3 9 + 5
5 5 2 + 7	2 4 7 + 8	9 5 4 + 1	6 3 4 + 1	6 2 3 + 8	7 8 5 + 4	6 1 6 + 5	3 7 5 + 5
3 9 7 + 2	6 5 7 + 6	9 3 7 + 5	7 6 7 + 4	8 3 9 + 5	9 8 7 + 6	6 4 3 + 9	9 2 6 + 7

- WHICH GROUP WON THIS TIME? _____

- WHICH GROUP MADE THE LEAST MISTAKES? _____

— SUBTRACTION PRACTICE

BEAT THE CLOCK!

Can you do these in less than 20 minutes?

4 − 2 = ___	7 − 5 = ___	11 − 3 = ___	10 − 4 = ___	13 − 5 = ___	15 − 6 = ___
7 − 4 = ___	12 − 7 = ___	11 − 4 = ___	6 − 2 = ___	16 − 7 = ___	8 − 7 = ___
10 − 8 = ___	13 − 9 = ___	2 − 0 = ___	15 − 9 = ___	17 − 9 = ___	7 − 2 = ___
8 − 5 = ___	10 − 3 = ___	13 − 7 = ___	8 − 4 = ___	7 − 0 = ___	13 − 6 = ___
12 − 9 = ___	19 − 8 = ___	14 − 2 = ___	7 − 5 = ___	20 − 12 = ___	20 − 9 = ___
13 − 5 = ___	18 − 12 = ___	19 − 12 = ___	2 − 2 = ___	16 − 8 = ___	15 − 15 = ___
7 − 6 = ___	16 − 5 = ___	7 − 0 = ___	15 − 9 = ___	14 − 7 = ___	13 − 9 = ___
8 − 6 = ___	8 − 1 = ___	15 − 8 = ___	12 − 8 = ___	12 − 5 = ___	10 − 5 = ___
5 − 2 = ___	15 − 2 = ___	10 − 1 = ___	8 − 6 = ___	13 − 2 = ___	11 − 3 = ___
12 − 8 = ___	14 − 6 = ___	7 − 5 = ___	7 − 1 = ___	12 − 12 = ___	16 − 9 = ___

— TIME TAKEN ____________

— Put each letter above the correct answer below.

HOW DID THE HAIRDRESSER MANAGE TO GET HOME SO QUICK?

___ ___   ___ ___ ___ ___   ___ ___ ___   ___ ___ ___ ___ ___
9 5   3 7 8 15   13 2 0   6 10 1 4 14

___ ___ ___ !
11 16 12

-HEAPS MORE SUBTRACTION TO PRACTICE! (REMEMBER TO CORRECT ANY MISTAKES.)

-	6	12	8	9	10	15
2						
5						
4						
3						

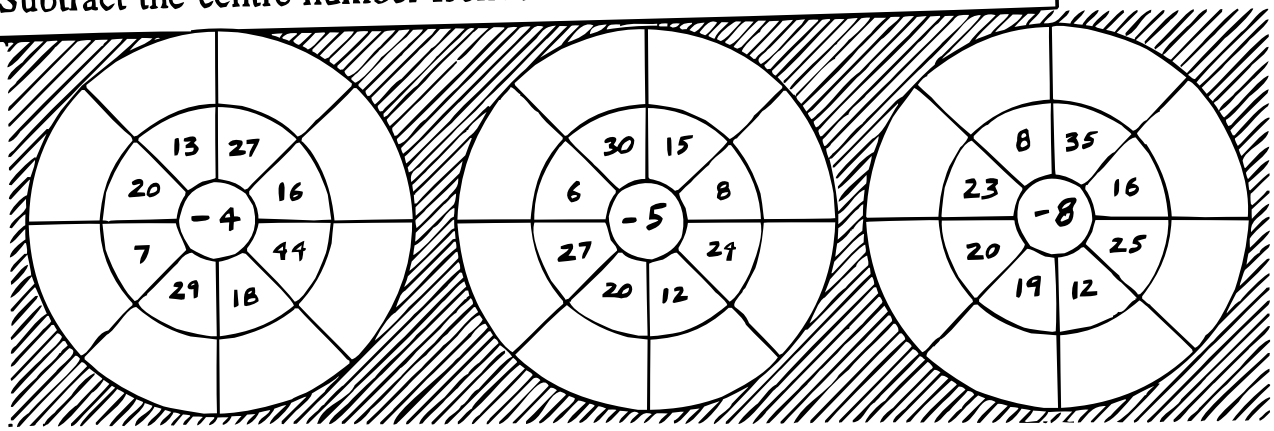
-	9	8	11	7
1				
4				
3				
2				

-	7	13	11	20	14	18
7						
1						
6						
4						

-	15	12	10	17
9				
10				
8				
6				

85 − 62 =	46 − 22 =	61 − 21 =	88 − 45 =	35 − 10 =	57 − 25 =
45 − 27 =	52 − 16 =	71 − 26 =	40 − 13 =	32 − 15 =	28 − 19 =
584 − 247 =	462 − 235 =	766 − 129 =	655 − 127 =	962 − 444 =	312 − 205 =
622 − 347 =	514 − 263 =	417 − 242 =	735 − 455 =	827 − 754 =	422 − 157 =
415 − 267 =	341 − 166 =	212 − 158 =	302 − 244 =	417 − 259 =	212 − 165 =

-Subtract the centre number from the numbers around the circle!



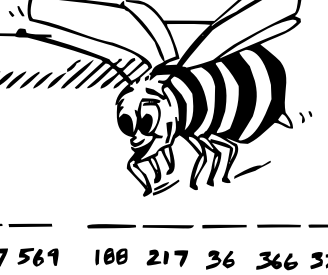
— MORE SUPER SUBTRACTION

— TO SHARPEN YOUR SKILLS!

1	85 − 62 = ___	46 − 22 = ___	61 − 21 = ___	88 − 45 = ___	35 − 10 = ___	57 − 25 = ___	73 − 12 = ___	87 − 44 = ___
2	45 − 27 = ___	52 − 16 = ___	71 − 26 = ___	40 − 13 = ___	32 − 15 = ___	28 − 19 = ___	44 − 36 = ___	52 − 17 = ___
3	587 − 247 = ___	462 − 235 = ___	766 − 129 = ___	655 − 127 = ___	962 − 444 = ___	312 − 205 = ___	463 − 204 = ___	633 − 217 = ___
4	622 − 347 = ___	514 − 263 = ___	417 − 242 = ___	735 − 455 = ___	827 − 754 = ___	422 − 157 = ___	635 − 246 = ___	352 − 177 = ___
5	415 − 267 = ___	341 − 166 = ___	212 − 158 = ___	302 − 244 = ___	417 − 259 = ___	212 − 165 = ___	302 − 185 = ___	443 − 257 = ___

— NOW ANSWER THESE SUBTRACTIONS, THEN DECODE THE QUESTIONS!

R 46 − 25 = ___	**E** 515 − 268 = ___	**K** 94 − 72 = ___	**D** 66 − 40 = ___	**A** 845 − 365 = ___	**H** 755 − 216 = ___
U 407 − 121 = ___	**C** 351 − 163 = ___	**Y** 798 − 229 = ___	**O** 462 − 245 = ___	**M** 52 − 16 = ___	
N 52 − 43 = ___	**S** 634 − 263 = ___	**C** 60 − 23 = ___	**B** 654 − 288 = ___	**T** 873 − 254 = ___	**W** 71 − 21 = ___



— Why do bees have sticky hair ?

___ ___ ___ ___ ___ ___ ___   ___ ___ ___ ___   ___ ___ ___   ___ ___ ___ ___ ___   ___ ___ ___ ___ ___

366 247 188 480 286 371 247   619 539 247 569   286 371 247   539 217 9 247 569   188 217 36 366 371

— Why do bees hum ?

___ ___ ___ ___   ___ ___ ___ ___   ___ ___ ___ ___   ___ ___ ___   ___ ___ ___ ___ ___

619 539 247 569   26 217 9 619   22 9 217 50   619 539 247   50 217 21 26 371

ADDITION AND SUBTRACTION

1

4 + 7 =	8 + 2 =	6 + 9 =	5 + 4 =	8 + 8 =	3 + 6 =

2

15 − 3 =	18 − 6 =	14 − 2 =	12 − 9 =	15 − 7 =	17 − 8 =

3

16 + 2 =	12 + 7 =	15 + 3 =	18 + 4 =	23 + 8 =	25 + 5 =

4

15 − 4 =	17 − 2 =	18 − 6 =	22 − 7 =	25 − 8 =	33 − 5 =

5

22 + 34 =	27 + 12 =	35 + 13 =	21 + 28 =	16 + 21 =	38 + 11 =

6

47 − 13 =	28 − 15 =	26 − 11 =	49 − 17 =	33 − 22 =	35 − 24 =

7

24 + 17 =	35 + 26 =	28 + 13 =	44 + 27 =	35 + 29 =	28 + 15 =

8

24 − 18 =	34 − 26 =	31 − 15 =	24 − 17 =	32 − 28 =	40 − 23 =

9

136 + 125 =	224 + 117 =	148 + 123 =	141 + 249 =	278 + 115 =	164 + 129 =

10

153 − 116 =	192 − 159 =	234 − 107 =	211 − 103 =	251 − 136 =	222 − 115 =

× MULTIPLICATION – WRITE THESE ANSWERS!

LEVEL 1

2 × 3 = ____ 4 × 4 = ____ 3 × 8 = ____ 9 × 2 = ____ 7 × 4 = ____ 3 × 7 = ____

9 × 0 = ____ 4 × 8 = ____ 7 × 2 = ____ 8 × 8 = ____ 6 × 5 = ____ 12 × 3 = ____

5 × 5 = ____ 6 × 2 = ____ 7 × 8 = ____ 8 × 5 = ____ 6 × 1 = ____ 2 × 2 = ____

8 × 4 = ____ 11 × 6 = ____ 4 × 10 = ____ 3 × 9 = ____ 2 × 10 = ____ 4 × 11 = ____

5 × 9 = ____ 6 × 8 = ____ 9 × 9 = ____ 2 × 12 = ____ 6 × 8 = ____ 5 × 3 = ____

LEVEL 2

42 × 3 = ____	11 × 5 = ____	72 × 3 = ____	44 × 2 = ____	61 × 6 = ____	82 × 4 = ____	57 × 3 = ____

18 × 2 = ____ 17 × 3 = ____ 23 × 4 = ____ 14 × 2 = ____ 35 × 2 = ____ 61 × 3 = ____

LEVEL 3

242 × 2 = ____	121 × 4 = ____	611 × 8 = ____	271 × 2 = ____	415 × 3 = ____	316 × 4 = ____
325 × 5 = ____	417 × 6 = ____	525 × 3 = ____	616 × 8 = ____	475 × 5 = ____	395 × 7 = ____

LEVEL 4

343 × 17 = ____	221 × 16 = ____	444 × 22 = ____	358 × 19 = ____	246 × 15 = ____	371 × 23 = ____	343 × 47 = ____

WRITE THESE SUMS AS A MULTIPLICATION SENTENCE!

-THE FIRST ONE IS DONE FOR YOU!

5+5+5 = 3×5 8+8+8+8 = _____ 4+4 = _____

9+9+9 = _____ 4+4+4+4+4 = _____ 2+2+2+2+2 = _____

7+7+7+7+7+7+7 = _____ 6+6+6+6+6+6+6+6 = _____

Multiply each number by 10

16	20	10	28	7	15	8	4	13	10	53	30	400	3142	215	0

Multiply each number by 100

2	6	1	15	3	22	18	25	72	100	0	34	500	316	210	5167

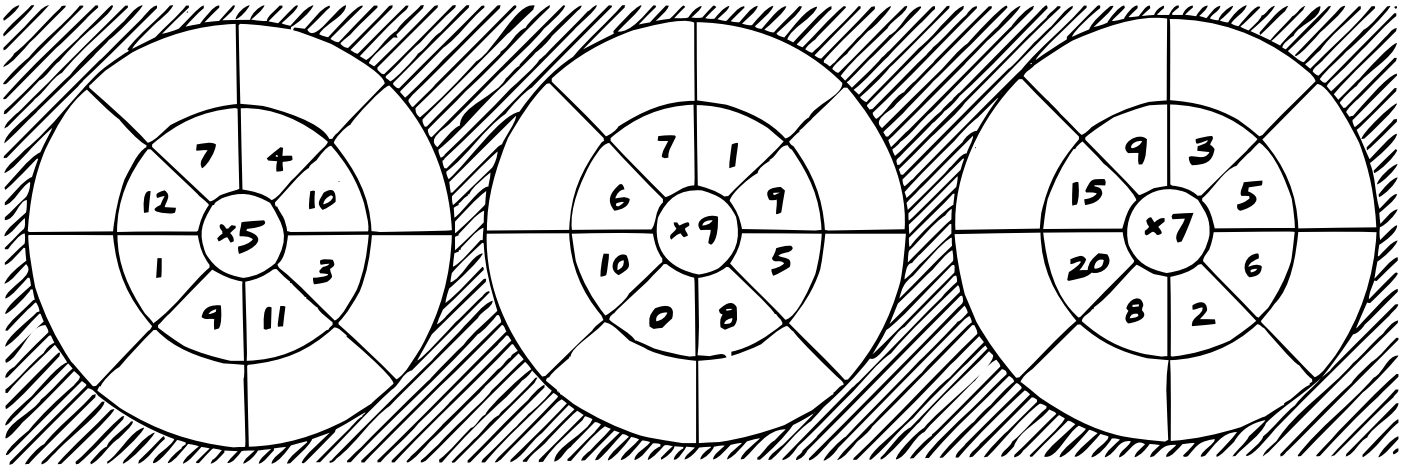
Fill out the multiplication squares

X	7	4	3	2
6				
2				
8				
1				

X	9	5	4	2
3				
7				
8				
5				

X	5	7	9
12			
15			
10			

Multiply each of the centre numbers by the numbers around the circle.



MUCH MUCH MORE... ...MULTIPLICATION!

2 x 8 = ___	7 x 1 = ___	1 x 1 = ___	5 x 9 = ___	3 x 3 = ___	9 x 9 = ___
7 x 5 = ___	4 x 7 = ___	1 x 8 = ___	11 x 5 = ___	8 x 2 = ___	7 x 9 = ___
4 x 2 = ___	8 x 8 = ___	8 x 9 = ___	7 x 10 = ___	6 x 6 = ___	11 x 11 = ___
3 x 9 = ___	6 x 2 = ___	9 x 3 = ___	3 x 11 = ___	10 x 4 = ___	10 x 2 = ___
5 x 6 = ___	3 x 3 = ___	8 x 7 = ___	4 x 4 = ___	3 x 1 = ___	6 x 12 = ___
8 x 5 = ___	10 x 0 = ___	6 x 1 = ___	12 x 12 = ___	9 x 8 = ___	8 x 3 = ___

Use your multiplication skills to fill in the spaces.

6 x □ = 3 x 8	6 x □ = 4 x 9	4 x □ = 3 x 12
□ x 12 = 4 x 6	□ x 3 = 9 x 4	10 x 8 = 20 x □
5 x 6 = □ x 3	10 x □ = 8 x 5	□ x 2 = 5 x 4
8 x □ = 64 x 1	42 x 2 = □ x 7	4 x □ = 16 x 1

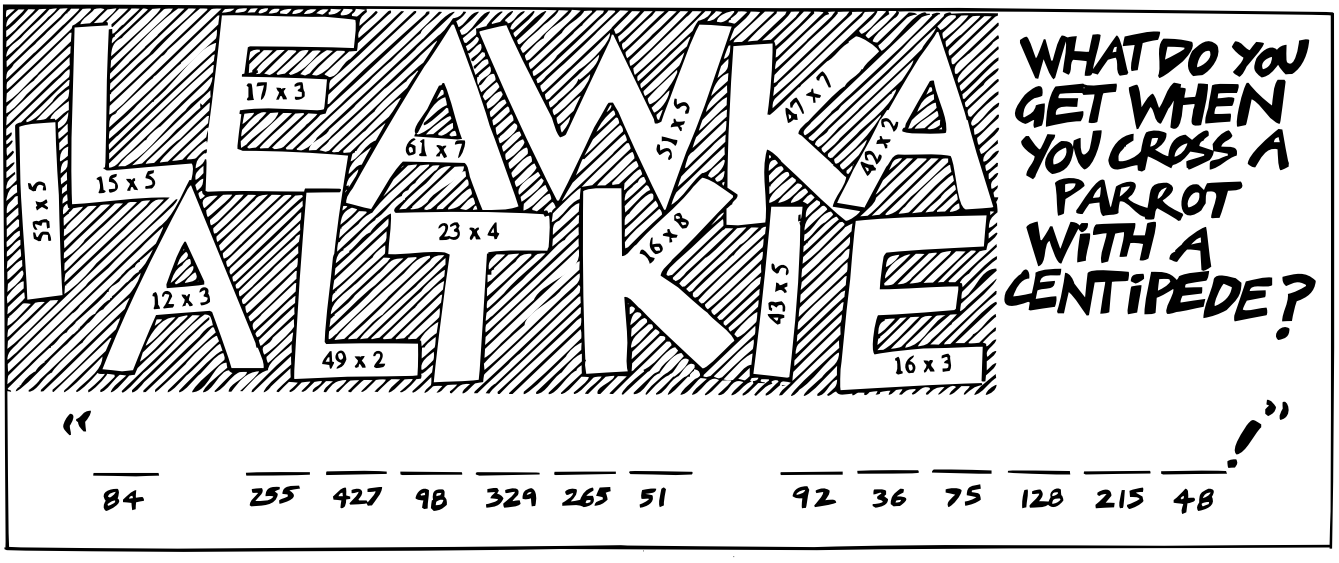
MULTIPLICATION SQUARES

x			
x	4	3	
	5	2	
			120

x			
x	4	1	
	6	2	

x			
x	10	5	
	6	8	

Put each letter above the correct answer below.



DIVISION

WARNING - DIVISION CAN BE ADDICTIVE... BENEFICIAL... FUN...

LEVEL 1

16 ÷ 4 = ____	45 ÷ 5 = ____	16 ÷ 2 = ____	28 ÷ 4 = ____	32 ÷ 8 = ____
55 ÷ 5 = ____	63 ÷ 9 = ____	56 ÷ 7 = ____	21 ÷ 3 = ____	14 ÷ 2 = ____
60 ÷ 10 = ____	81 ÷ 9 = ____	25 ÷ 5 = ____	20 ÷ 2 = ____	6 ÷ 6 = ____
54 ÷ 6 = ____	10 ÷ 2 = ____	20 ÷ 4 = ____	63 ÷ 9 = ____	20 ÷ 10 = ____
64 ÷ 8 = ____	36 ÷ 12 = ____	44 ÷ 11 = ____	42 ÷ 7 = ____	24 ÷ 3 = ____
80 ÷ 10 = ____	35 ÷ 5 = ____	12 ÷ 4 = ____	28 ÷ 2 = ____	63 ÷ 7 = ____

LEVEL 2

303 ÷ 3 = ____	624 ÷ 6 = ____	432 ÷ 4 = ____	981 ÷ 9 = ____
672 ÷ 6 = ____	615 ÷ 5 = ____	330 ÷ 6 = ____	212 ÷ 4 = ____
916 ÷ 4 = ____	627 ÷ 3 = ____	432 ÷ 8 = ____	426 ÷ 2 = ____
225 ÷ 5 = ____	144 ÷ 4 = ____	616 ÷ 4 = ____	875 ÷ 7 = ____

LEVEL 3

1. Divide 768 by 3. _____

2. What is 420 divided by 7 ? _____

3. Russell worked for 12 hours and made $72.
   How much did he make per hour ? _____

4. Mrs Armstrong's class of 30 students raised $240 towards their class trip. How much did each student make ?

   _____

5. There are 200 students and 10 teachers.
   If you had to give each teacher an equal amount of students, how many would there be per class ? _____

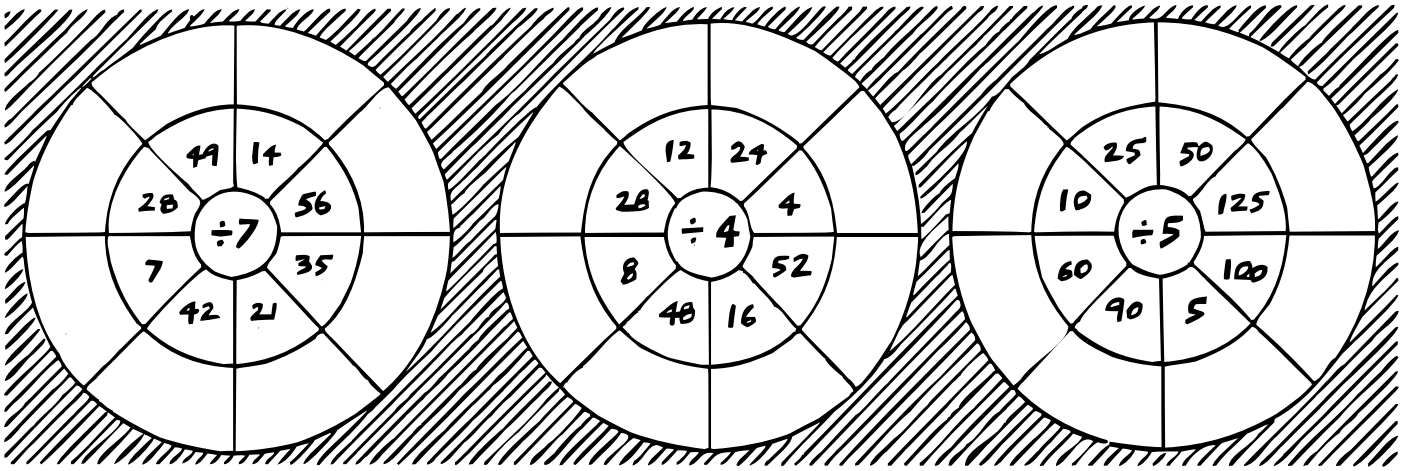
Divide each number by 10

60	40	20	10	580	1000	1600	2000	10 000	12680	157800

Divide each number by 100.

100	2000	2500	5000	200	3600	1500	53000	41600	271000	19000000

Divide each number by the one in the centre of each circle.



-WRITE THESE EQUATIONS AS A DIVISION SENTENCE!

-EXAMPLE

12+12+12 = 36	36 ÷ 3 = 12
7 + 7 = 14	
9 + 9 + 9 = 27	
5 × 3 = 15	
4 × 8 = 32	
14 + 2 = ____	÷ 2
15 + 5 = 40 ÷	

-DO-DA-CRAZY DIVISION!

÷		
48	8	
6	2	

÷		
84	12	
21	3	

÷		
100	25	
10	5	

Dad shared 12 apples equally among his 4 children.
How many apples did each child get ?

Mum shared 80c between 4 children.
How much did each child get ?

Uncle Ben shared 27 chocolates between 4 children.
How many did each child get ?
How many were left for Uncle Ben ?

-DIVISION SQUARES!

÷	20	40	60	80
2				
4				
5				
10				

÷	12	24	36	48
2				
3				
4				
6				

÷	50	100	200	500
10				
5				
2				
25				

Find a place for each card. (You can only use each card once.)

2 3 4 5 6 7 8 9 10

16 ÷ 2 = ☐ 49 ÷ 7 = ☐ 100 ÷ 10 = ☐ 25 ÷ 5 = ☐

36 ÷ 9 = ☐ 16 ÷ ☐ = 8 42 ÷ ☐ = 7 27 ÷ ☐ = 9

54 ÷ ☐ = 6

÷ DIVISION REVISION

36 ÷ 6 = ___	70 ÷ 10 = ___	30 ÷ 5 = ___	44 ÷ 2 = ___	72 ÷ 6 = ___
45 ÷ 9 = ___	36 ÷ 9 = ___	108 ÷ 12 = ___	45 ÷ 3 = ___	60 ÷ 10 = ___
56 ÷ 8 = ___	70 ÷ 7 = ___	56 ÷ 7 = ___	16 ÷ 4 = ___	72 ÷ 9 = ___
32 ÷ 4 = ___	48 ÷ 8 = ___	12 ÷ 4 = ___	82 ÷ 2 = ___	21 ÷ 7 = ___

Sometimes in division something is left over.

Examples. $8 \div 5 = 1\frac{3}{8}$ $12 \div 5 = 2\frac{2}{5}$ $19 \div 9 = 2\frac{1}{9}$

Now try these.

5 ÷ 2 = ___	7 ÷ 2 = ___	18 ÷ 5 = ___	13 ÷ 6 = ___	21 ÷ 5 = ___
13 ÷ 7 = ___	13 ÷ 2 = ___	13 ÷ 3 = ___	12 ÷ 5 = ___	27 ÷ 8 = ___
9 ÷ 4 = ___	8 ÷ 5 = ___	7 ÷ 3 = ___	11 ÷ 3 = ___	3 ÷ 2 = ___
8 ÷ 3 = ___	23 ÷ 10 = ___	17 ÷ 7 = ___	13 ÷ 8 = ___	7 ÷ 4 = ___

You might need a calculator.

150 ÷ 25 = ___	225 ÷ 15 = ___	405 ÷ 15 = ___	742 ÷ 14 = ___
169 ÷ 13 = ___	510 ÷ 34 = ___	204 ÷ 12 = ___	396 ÷ 33 = ___
560 ÷ 28 = ___	323 ÷ 19 = ___	594 ÷ 18 = ___	564 ÷ 12 = ___
368 ÷ 16 = ___	594 ÷ 27 = ___	952 ÷ 34 = ___	837 ÷ 31 = ___
228 ÷ 19 = ___	351 ÷ 13 = ___	624 ÷ 13 = ___	376 ÷ 47 = ___

MATHEMATICAL SENTENCES

-WRITE A NUMBER SENTENCE FOR EACH STATEMENT.
(THE FIRST ONE IS DONE FOR YOU!)

• The sum of 9 and 8 is 17	9 + 8 = 17
• The difference between 24 and 16 is 8	
• 45 is greater than 22	
• The product of 6 and 4 is 24	
• The sum of 8 and 12 is less than 30	
• 8 from 13 is 5	
• 12 and 9 is 21	
• Add 7 to 3 and get 10	
• 5 is less than 24	
• Subtract 3 from 27 to get 24	
• The product of 8 and 5 is equal to the sum of 36 and 4	
• 16 divided by 8 is 2	
• 27 is greater than 16	
• Multiply six eights and get forty eight	

-HOW MANY DIFFERENT NUMBERS CAN YOU FIND, USING THE NUMBER 3, THREE TIMES, AND ANY MATHEMATICAL SIGN?

-EXAMPLE

1. $3 + 3 + 3 = 9$
2. $3 + (3 \div 3) = 4$
3. $3 + (3 \times 3) = 12$

-NOW FIND 4 MORE!

1. _____
2. _____
3. _____
4. _____

Complete these sentences so that they all equal 12.

$4 + \square = 12$	$2 \times \square = 12$	$16 - \square = 12$
$36 \div \square = 12$	$21 - \square = 12$	$11 + \square = 12$
$\frac{1}{2}$ of $\square = 12$	$3 \times \square = 12$	$24 \div \square = 12$

Show 6 more maths sentences that equal 12.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Show three interesting ways of writing the numbers below.
The first one is done for you.

	15	20	36	100
1	$(3+3)+(3\times3)$			
2	$(3\times3)+(3\times3)-3$			
3	$(5\times5)-(5+5)$			

MORE... ...NUMBER SENTENCES!

Fill in the spaces with the correct number.

16 + 4 = ____ + 8	3 × 2 × ____ = 30	(5 × 4) + 3 = ____
(6 × 6) + ____ = 40	19 + 7 = 33 − ____	42 ÷ ____ = 9 − 3
100 − 20 = 40 × ____	10 + 10 = ____ × 10	(8 × 2) + 6 = ____
(6 × ____) + 10 = 40	(____ × 10) − 5 = 45	8 × (2 + 6) = ____
4 × ____ × 9 = 72	(12 ÷ 3) ÷ ____ = 1	12 ÷ (6 ÷ 2) = ____

Now give the correct sign. (+ - x ÷)

6 ◯ 4 = 24	12 ◯ 3 = 4	16 ◯ 4 = 2 × 2
(26 − 5) = 7 ◯ 3	8 ◯ 2 = 5 + 5	(3 × 5) ◯ 6 = 9
5 ◯ (3 + 5) = 13	10 ◯ (4 × 2) = 2	36 ◯ 4 = 7 ◯ 2

Complete the sentences by using > = or < signs

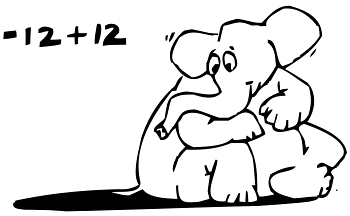
63 ☐ 9 × 7	16 + 5 ☐ 27	9 × 9 ☐ 100
50 ☐ 43 + 4	27 + 5 ☐ 32	100 − 40 ☐ 60
36 ☐ 9 × 4	2 × 13 ☐ 27	15 × 5 ☐ 30
36 ÷ 4 ☐ 20 − 12	17 + 2 ☐ 6 × 3	14 − 8 ☐ 6 + 6
15 ÷ 5 ☐ 24 ÷ 6	15 × 0 ☐ 3 × 2	10 × 90 ☐ 90 × 10

– WHY DO ELEPHANTS HAVE SO MANY WRINKLES?

To find the answer, calculate the missing number in each problem, then put the letter above that number in the code below.

Letter	Problem
N	9 + 9 + 9 + 9 = ____ × 9
R	5 × 12 = 6 × ____
A	(8 + 6) ÷ 2 = ____
Y	(48 + 6) ÷ ____ = 9
D	19 + 8 = 30 – ____
V	3 × 9 = 16 + ____
E	____ + 8 = 7 × 3

Letter	Problem
T	6 + 6 + 6 = ____ × 2
O	16 ÷ ____ = 48 ÷ 6
U	3 × 2 × ____ = 30
H	(8 × 6) + ____ = 56
I	____ × 2 = 12 + 12



“ ___ ___ ___ ___ (8 7 11 13) ___ ___ ___ (6 2 5) ___ ___ ___ ___ (13 11 13 10) ___ ___ ___ ___ ___ (9 10 12 13 3)

___ ___ (9 2) ___ ___ ___ ___ (12 10 2 4) ___ ___ ___ (2 4 13) ?”

Letter	Problem	Letter	Problem	Letter	Problem
I	3 × (6 – 1) = ____	H	(8 + 3) × 6 = ____	A	(5 – 2) × 3 = ____
P	10 × (6 – 4) = ____	T	3 × (5 – 3) = ____	Z	4 × (2 + 1) = ____
U	8 × (1 × 5) = ____	S	(4 – 4) × 5 = ____	W	4 × (5 + 6) = ____
C	4 × (10 – 2) = ____	W	(10 – 6) × 6 = ____	E	(3 + 1) × 4 = ____
R	5 × (6 + 4) = ____	D	6 × (12 – 7) = ____	N	(2 + 3) × 2 = ____
O	(5 – 4) × 3 = ____	L	3 × (10 + 2) = ____		

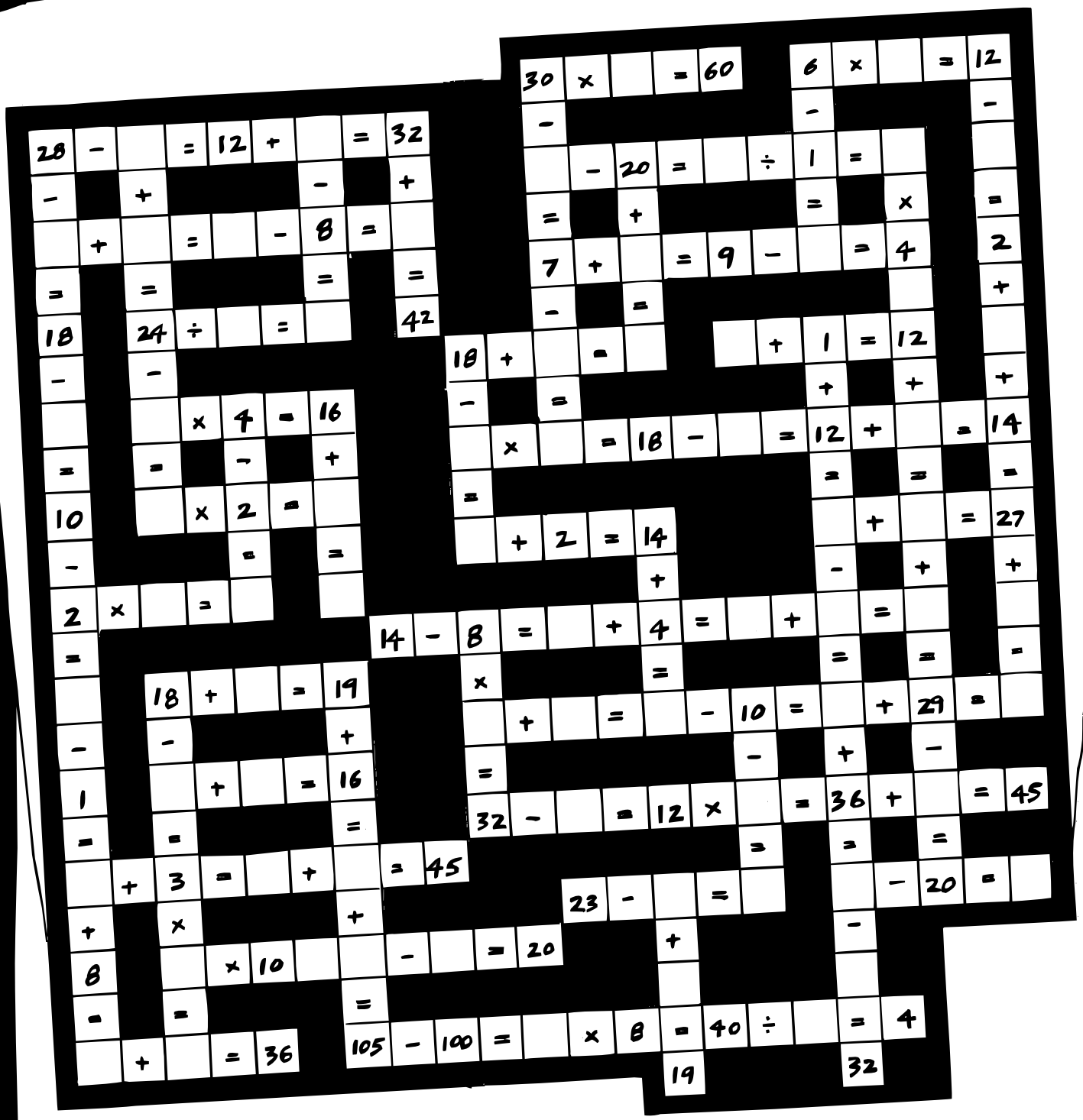
___ ___ ___ (10 16 44) ___ ___ ___ ___ ___ ___ ___ (12 16 9 36 9 10 30)

___ ___ ___ ___ (24 15 10 0) ___ ___ ___ (6 66 16)

___ ___ ___ ___ ___ (24 3 50 36 30) ___ ___ ___ (32 40 20) !

-CRAZY CROSS-NUMBER.

Add the missing numbers.



- Calculate the missing number in each problem, then put the letter above that number in the code below.

N	$36 - 24 \div 6 =$ ____	T	$12 + 12 \div 3 =$ ____
R	$5 + 7 \times 2 =$ ____	O	$26 - 4 \div 4 =$ ____
A	$42 - 6 \times 3 =$ ____	I	$7 + 9 \times 6 =$ ____
L	$27 + 9 \div 3 =$ ____	H	$18 - 8 \div 2 =$ ____
S	$12 + 18 \div 6 =$ ____	M	$4 + 7 \times 2 =$ ____
C	$20 - 12 \times 1 =$ ____		
E	$5 + 2 \times 4 =$ ____		

"__ __ __ __ __ __ __ __ __ __ __ __ __ __   __ __ __

18 24 16 14 13 18 24 16 61 8 61 24 32 15   24 19 13

__ __ __ __   __ __ __ __   __ __ __ __!"

19 13 24 30   8 25 25 30   8 24 16 15

Complete this table for coins making up a dollar.

Coin	Number to make $1	Fraction of a $
50c		
20c		
10c		
5c		

Fill in the boxes to complete the sums.

$7 + \square = 12$

$8 + \square = 22$

$\square + 9 = 18$

$\square + 6 = 15$

$3 + 29 = \square$

$4 + 18 = \square$

$6 + \square = 23$

$\square + 12 = 38$

$34 + 29 = \square$

Complete these sentences by writing
< = or > into each ◯

$6 + 5 \bigcirc 9$

$12 + 7 \bigcirc 25$

$8 + 4 \bigcirc 9 + 2$

$15 + 2 \bigcirc 10 + 7$

$18 + 12 \bigcirc 10 + 10$

$8 + 2 \bigcirc 82$

$9 \bigcirc 4 + 7$

$5 \bigcirc 2 + 1$

COMPLETE THE SQUARES BY ADDING THE ROWS AND COLUMNS!!

+			
+	3	7	
	8	4	

+			
+	12	16	
	9	5	

+			
+	24	20	
	16	15	

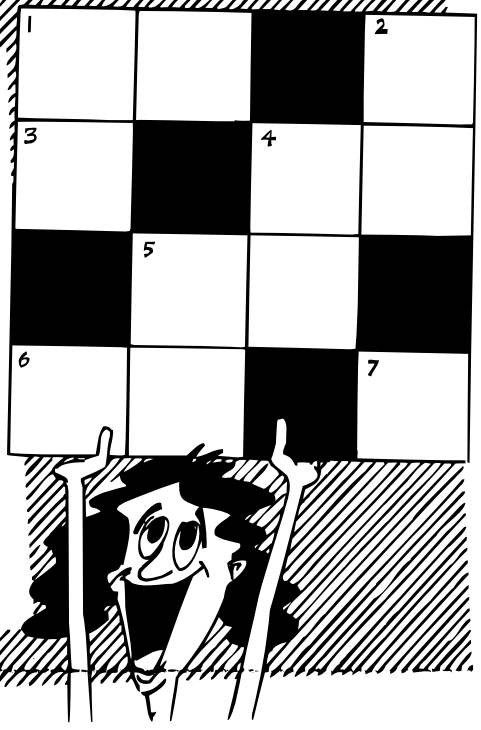
CRAZY CROSS-NUMBER

ACROSS

1. Increase 10 by 6.
3. The sum of 6 and 3.
4. Russell saves $25
   Beverly saves $11
   Graeme saves $2
   How much is saved altogether?
5. Sandy has 27 music cassettes
   Jean has 32 music cassettes
   Audrey has 25 music cassettes
   How many cassettes altogether?
6. What is 6 more than 16.

DOWN

1. 5 + 6 + 8
2. 16 + 12
4. 9 + 25
5. 24 + 25 + 33
7. 1 + 5 + 1 + 2



Fill in the boxes to complete the sums.

17 - □ = 9 □ - 6 = 5

12 - □ = 3 □ - 7 = 2

□ - 8 = 2 □ - 5 = 3

□ - 5 = 7 □ - 4 = 8

22 - 8 = □

15 - 6 = □

24 - □ = 6

23 - □ = 5

19 - □ = 1

Complete these sentences by writing < = or > into each ◯

16 - 8 ◯ 5

12 - 6 ◯ 3

11 - 4 ◯ 7

10 - 8 ◯ 8

15 - 12 ◯ 6

18 - 12 ◯ 6

13 - 7 ◯ 1

SUBTRACTION SQUARES

−		
6	4	
2	2	

−		
10	7	
5	2	

−		
12	8	
5	3	

−		
24	18	
9	6	

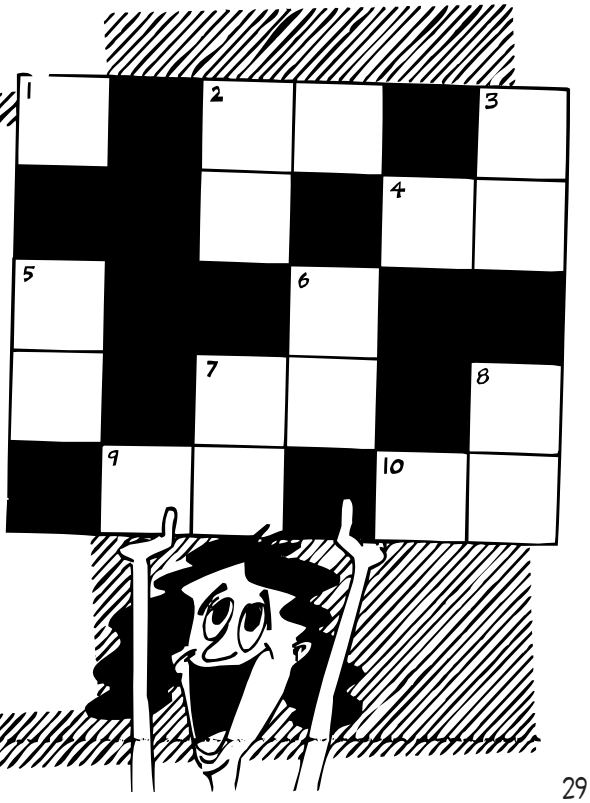
CRAZY CROSS-NUMBER

ACROSS

1. Take 12 away from 20.
2. The difference between 6 and 20.
4. Beverly has $ 100
   She spends 50
   How much does she have left?
7. Take 8 away from 20.
9. Decrease 30 by 1.
10. The difference between 40 and 6.

DOWN

2. 33 - 16
3. 100 - 10
5. 25 - 10
6. 30 - 8
7. 32 - 13
8. 34 - 20



SOLVE THESE PUZZLERS

How much for 3 stamps ?

_____

This spider has 8 legs
How many legs do 8 spiders have?

_____

1 apple costs 25 ¢
How much for 4 apples ?

_____

1 Easter egg costs 20 ¢
How much for 3 Easter eggs ?

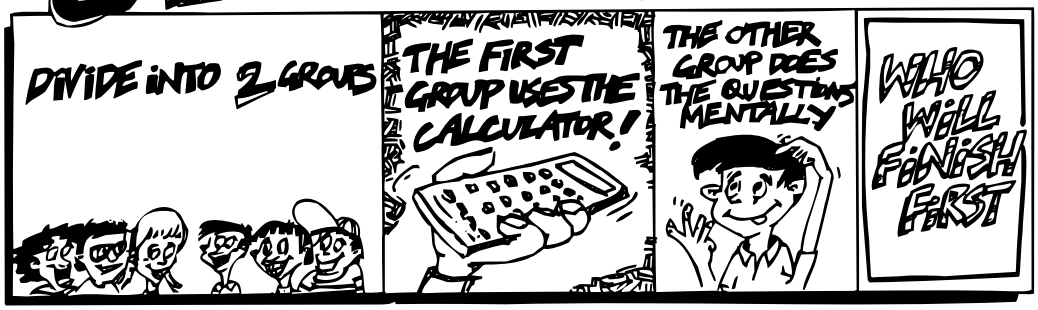
_____

There are 7 days in a week.
How many days in 4 weeks ?

_____

-IT'S TIME TO...

-BEAT THE CALCULATOR!



23 × 3 = _____	16 × 5 = _____	14 × 8 = _____	26 × 4 = _____	41 × 7 = _____	54 × 6 = _____
17 × 2 = _____	24 × 6 = _____	15 × 7 = _____	11 × 8 = _____	13 × 7 = _____	19 × 1 = _____

?

Which group finished first. _____

Groups now swap over and try again.

90 × 3 = _____	78 × 5 = _____	27 × 6 = _____	56 × 8 = _____	62 × 2 = _____	15 × 7 = _____
17 × 9 = _____	78 × 4 = _____	22 × 3 = _____	51 × 6 = _____	23 × 7 = _____	15 × 2 = _____

Which group made the most mistakes ? _____

-ORDERING YOUR MULTIPLICATION

FIRST OF ALL TRY THESE (REMEMBER BRACKETS FIRST!)

(6 × 2) × 3 = _____	6 × (2 × 3) = _____
(8 × 3) × 2 = _____	8 × (3 × 2) = _____
(6 × 4) × 3 = _____	6 × (4 × 3) = _____
(10 × 3) × 8 = _____	10 × (3 × 8) = _____
(8 × 6) × 2 = _____	8 × (6 × 2) = _____

Which column was the easiest to work out ? _____

When you change the order in multiplication does the answer change ? _____

-NOW TRY THESE !
-CIRCLE THE EASIEST ONE TO ANSWER.

25 × (12 × 4) = _____	(25 × 12) × 4 = _____
(4 × 25) × 12 = _____	(4 × 12) × 25 = _____

A short way of multiplying is to group together certain numbers.

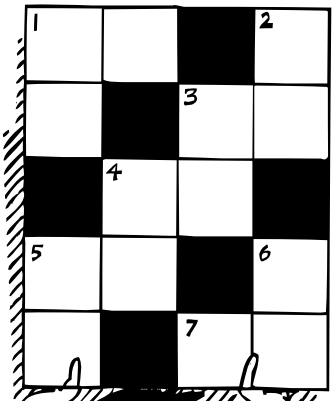
5 × 16 × 2 = 10 × 16
= 160

8 × 20 × 5 = 8 × 100
= 800

- NOW YOU TRY THESE !

2 × 16 × 5 = _____	5 × 22 × 2 = _____	55 × 50 × 2 = _____
5 × 2 × 27 = _____	2 × 50 × 4 = _____	5 × 24 × 2 = _____
4 × 29 × 25 = _____	25 × 80 × 4 = _____	20 × 16 × 5 = _____
50 × 18 × 2 = _____	5 × 99 × 2 = _____	17 × 5 × 20 = _____
2 × 67 × 5 = _____	4 × 112 × 25 = _____	500 × 13 × 2 = _____
98 × 10 × 10 = _____	2 × 67 × 5 = _____	14 × 2 × 500 = _____

CROSS-NUMBER



ACROSS

1. The product of 8 and 2
3. Multiply 5 by 9
4. 13 times 2
5. Eggs are sold in cartons containing 12 eggs. How many eggs in 6 cartons ?
7. Tennis balls are sold in half dozen packets. How many balls in 9 packets ?

DOWN

1. 4 x 3
2. 5 x 5
3. 23 x 2
4. 1 x 2 x 11
5. 2 x 13 x 3
6. 2 x 2 x 11

-MATHS GOLF

HOW TO PLAY

1 You are allowed 3 types of club

Club 2
Club 3
Club 5

2 You can hit with one of the following strengths

Strength 1
Strength 3
Strength 7

3 Combine Clubs with strength

Club 3 Strength 6
= 3 x 6
Distance Covered
= 18m

EXAMPLE 1

Hole distance 26m

Club 3 Strength 7 = 3 x 7 = 21 m

Club 5 Strength 2 = 5 x 1 = 5m

Total of 26m in two strokes

EXAMPLE 2

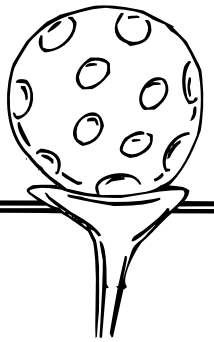
You can hit backwards
Hole distance 10m

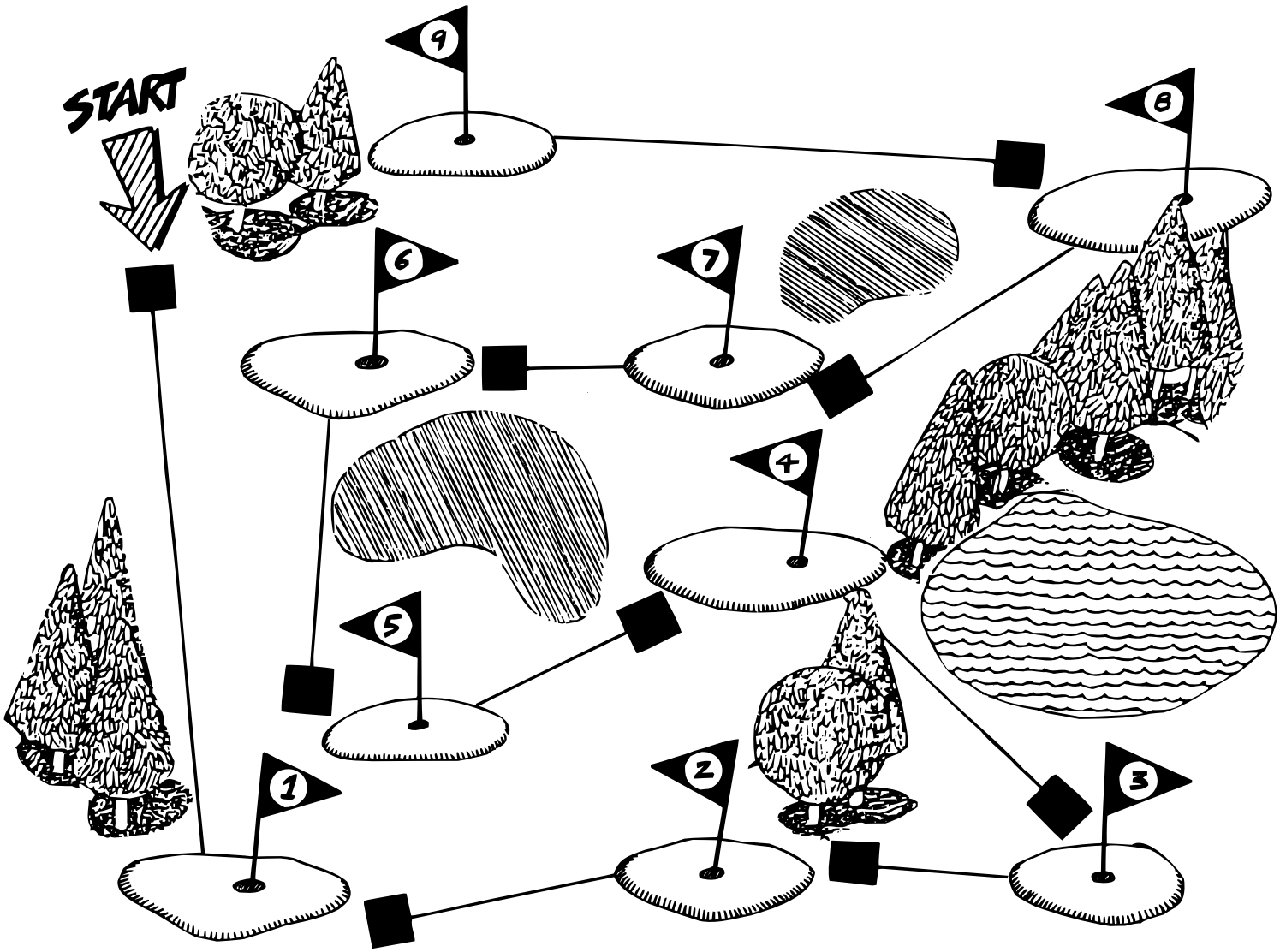
Club 5 Strength 3 = 5 x 3 = 15m

Club 5 Strength 1 = 5 x 1 = 5m

Total distance = 15 - 5
10m in two strokes

-NOW IT'S TIME TO TEE OFF!



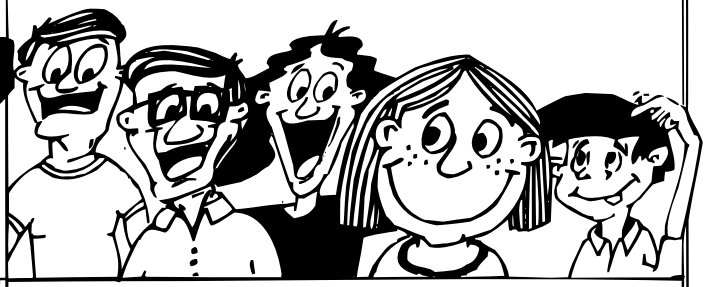


HOLE	DISTANCE	CLUB & STRENGTH	STROKES
1	44m		
2	25m		
3	23m		
4	27m		
5	29m		
6	35m		
7	18m		
8	46m		
9	56m		
		TOTAL	

-MATHS BINGO!

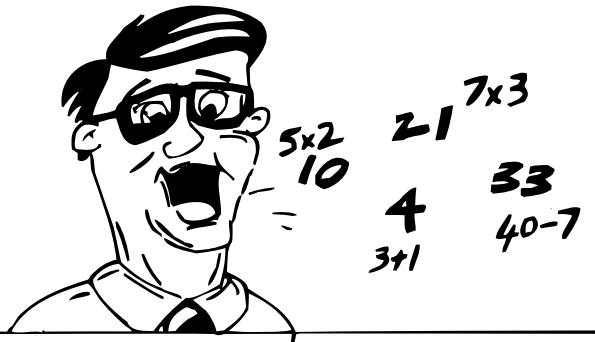
THE WHOLE CLASS CAN PLAY THIS GAME.

YOU NEED A PENCIL AND A PIECE OF PAPER



1 EACH PERSON CHOOSES 5 NUMBERS BETWEEN 20 & 40 AND WRITES THEM DOWN.

2 THE TEACHER CALLS OUT SUMS WITH ANSWERS BETWEEN 20 & 40.



3 IF YOU HAVE A NUMBER EQUALLING THAT SUM, CROSS IT OUT!

~~21~~ 37
33 ~~26~~
32

4 -THE WINNER IS THE FIRST PERSON WITH ALL THEIR NUMBERS CROSSED OUT.

THE WINNER NOW CHOOSES A DIFFERENT NUMBER RANGE AND BECOMES THE CALLER!

SQUARES

5^2 reads " five squared "
Mathematically it means 5 x 5 , which equals 25

Find the squares of these numbers

$2^2 =$ ___	$4^2 =$ ___	$7^2 =$ ___	$3^2 =$ ___
$5^2 =$ ___	$8^2 =$ ___	$6^2 =$ ___	$1^2 =$ ___
$7^2 =$ ___	$10^2 =$ ___	$13^2 =$ ___	$15^2 =$ ___

Now answer the questions and write each answer in the correct square.
If you have all the answers correct you will have a MAGIC square!

1. $3^2 - 3 =$ ___
2. $1^2 =$ ___
3. $2^2 + 2^2 =$ ___
4. $1^2 + 6 =$ ___
5. $30 - 5^2 =$ ___
6. $4^2 - 13 =$ ___
7. $6^2 \div 18 =$ ___
8. $5^2 - 4^2 =$ ___
9. $2^2 \div 1^2 =$ ___

1	2	3
4	5	6
7	8	9

You use squares to find the square root of a number.

$\sqrt{25} = 5$ because $5 \times 5 = 25$

Find the square root of these numbers.

$\sqrt{49} =$ ___	$\sqrt{16} =$ ___	$\sqrt{25} =$ ___	$\sqrt{36} =$ ___
$\sqrt{64} =$ ___	$\sqrt{144} =$ ___	$\sqrt{9} =$ ___	$\sqrt{1} =$ ___
$\sqrt{81} =$ ___	$\sqrt{4} =$ ___	$\sqrt{100} =$ ___	$\sqrt{169} =$ ___

Answer each question and write the answer in the correct square.
You should have another magic square!

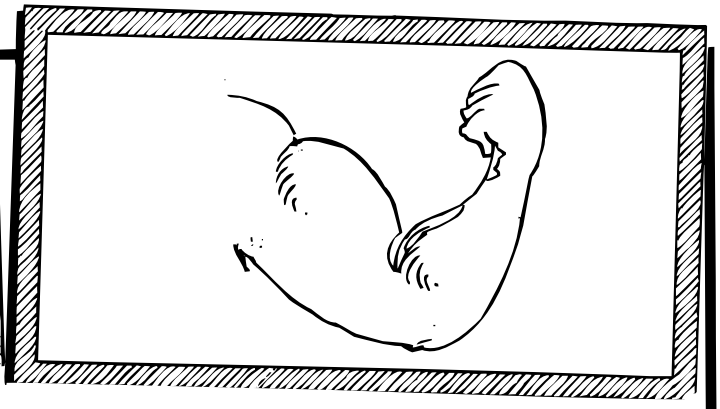
1. $\sqrt{36} + \sqrt{16}$ ___
2. $\sqrt{25} + 10$ ___
3. $6^2 - 5^2$ ___
4. $\sqrt{121} + \sqrt{121}$ ___
5. $\sqrt{25} \times 4$ ___
6. $\sqrt{81} + 2^2$ ___
7. $5^2 - \sqrt{64}$ ___
8. $\sqrt{64}$ ___
9. $\sqrt{49} \times 3$ ___
10. $4^2 - 2^2$ ___
11. $5^2 - \sqrt{81}$ ___
12. $\sqrt{144} - \sqrt{9}$ ___
13. $\sqrt{36} + 1$ ___
14. $\sqrt{100} + 2^2 + 4$ ___
15. $8^2 - 7^2 - 1^2$ ___

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

19

THE MIGHTY MATHS BLACKBELT

ADDITION 1



Add 3 to each number +3

3	5	8	1	9	4	10	2	15	7

Add 8 to each number +8

1	5	6	9	2	0	8	3	13	4

Add 4 to each number +4

3	1	5	9	12	7	0	4	6	2

Add 6 to each number +6

6	2	0	9	1	14	5	3	7	4

Add 9 to each number +9

6	7	1	3	9	20	2	5	0	4

ADDITION 2

Add 7 to each number +7

14	19	17	15	12	10	9	13	16	23

Add 12 to each number +12

12	9	8	11	14	3	7	10	6	0

Add 3 to each number +3

15	19	18	11	9	4	10	2	15	17

Add 5 to each number +5

22	10	17	15	19	14	11	13	18	0

Add 8 to each number +8

11	15	16	19	12	0	18	13	14	32

Add 4 to each number +4

13	11	15	19	22	17	10	14	16	12

THE MIGHTY MATHS BLACKBELT

SUBTRACTION 1

Subtract 2 from each number **−2**

16	12	10	19	11	24	15	13	17	14

Subtract 5 from each number **−5**

16	17	11	13	19	22	12	15	10	14

Subtract 3 from each number **−3**

3	5	8	10	9	4	10	12	15	7

Subtract 6 from each number **−6**

12	10	9	6	7	14	11	23	13	20

Subtract 4 from each number **−4**

11	5	6	9	12	10	8	15	13	4

Subtract 7 from each number **−7**

13	11	15	9	12	7	10	14	16	8

THE MIGHTY MATHS BLACKBELT

SUBTRACTION 2

Subtract 6 from each number									-6
6	12	10	19	11	14	15	13	7	8

Subtract 9 from each number									-9
16	17	11	13	9	20	12	15	10	14

Subtract 7 from each number									-7
14	19	17	15	12	10	9	13	16	23

Subtract 12 from each number									-12
12	19	18	13	14	23	17	20	16	15

Subtract 3 from each number									-3
15	19	18	11	9	4	10	12	15	17

Subtract 5 from each number									-5
22	10	17	15	17	14	11	13	18	10

MULTIPLICATION 1

Multiply each number by 4 ×4

1	5	6	9	2	0	8	3	4	7

Multiply each number by 6 ×6

3	1	5	9	2	7	10	4	6	8

Multiply each number by 3 ×3

6	2	0	9	1	4	5	3	7	12

Multiply each number by 5 ×5

6	7	1	3	9	2	8	5	0	4

Multiply each number by 7 ×7

3	5	8	1	9	4	10	2	6	7

Multiply each number by 2 ×2

2	10	9	5	7	4	1	3	13	0

THE MIGHTY MATHS BLACKBELT

MULTIPLICATION 2

Multiply each number by 8 ×8

1	5	6	9	2	0	8	3	13	4

Multiply each number by 6 ×6

3	1	5	9	12	7	0	4	6	2

Multiply each number by 4 ×4

6	2	0	9	1	14	5	3	7	4

Multiply each number by 7 ×7

6	7	1	3	9	2	12	5	0	4

Multiply each number by 5 ×5

3	5	8	1	9	4	10	2	12	7

Multiply each number by 3 ×3

2	10	9	5	7	4	1	3	13	0

DIVISION 1

Divide each number by 2 ÷2									
14	18	10	6	12	20	36	8	16	22

Divide each number by 8 ÷8									
16	88	8	24	40	32	64	48	80	96

Divide each number by 3 ÷3									
15	39	18	12	9	24	33	21	30	27

Divide each number by 5 ÷5									
20	10	15	35	50	5	45	55	30	60

Divide each number by 8 ÷8									
16	8	40	24	72	48	88	32	80	56

Divide each number by 4 ÷4									
40	4	24	36	16	44	8	28	32	20

DIVISION 2

Divide each number by 3 ÷3									
3	9	27	12	15	6	18	24	21	30

Divide each number by 5 ÷5									
20	10	15	25	5	40	50	30	45	55

Divide each number by 7 ÷7									
14	56	7	28	21	70	49	35	42	84

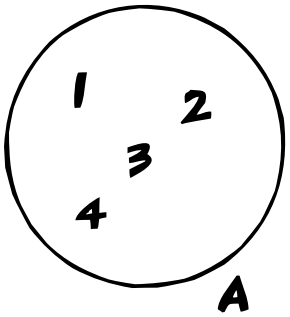
Divide each number by 4 ÷4									
32	12	16	4	20	8	24	36	40	44

Divide each number by 6 ÷6									
6	12	24	36	18	42	66	30	48	54

Divide each number by 9 ÷9									
90	9	27	36	99	18	45	72	54	63

SETS

The members of a set are called **ELEMENTS.** They are written between braces { }

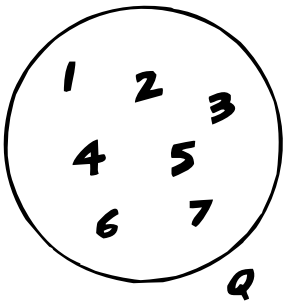


Set A has the elements 1, 2, 3, 4

A = { 1, 2, 3, 4 }

The number 4 is an element of set A $4 \in A$

1



Write TRUE or FALSE for set Q

$5 \in Q$	$8 \in Q$	$A \in Q$
$10 \in Q$	$0 \in Q$	$7 \in Q$
$4 \in Q$	$1 \in Q$	$2 \in Q$

2 Make these statements shorter by using ε

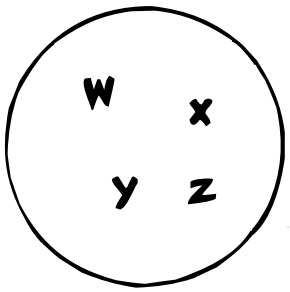
7 is an element of Q _____

4 is an element of Q _____

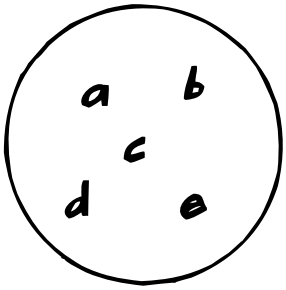
6 is an element of Q _____

1 is an element of Q _____

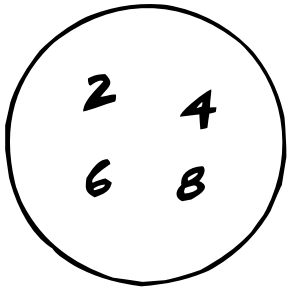
3



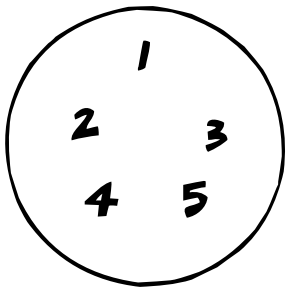
Set M



Set N



Set O

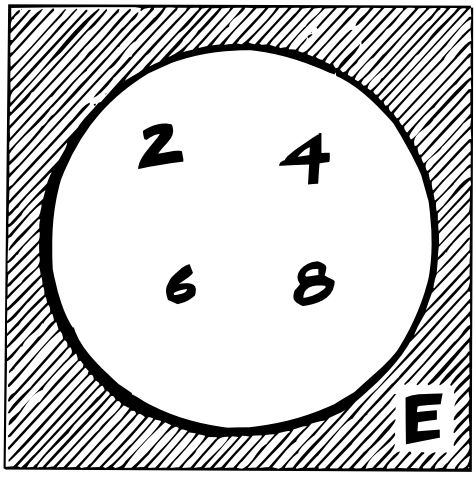


Set P

Write all these sets using braces

M = _____ P = _____

N = _____ O = _____



E is a set of even numbers between 0 & 10

E = { _____ }

True or False?

20 ∈ E _____

8 ∈ E _____

7 ∈ E _____

O is a set of counting numbers less than 7

O = { _____ }

X is a set of counting numbers between 15 and 25

X = { _____ }

Describe these sets in words. "Less than" and "Between" are useful words to remember when describing sets.

A = { 1, 2, 3, 4, 5, 6 } _____

B = { 2, 4, 6, 8, 10 } _____

C = { 15, 16, 17, 18 } _____

D = { 22, 24, 26, 28 } _____

E = { 14, 15, 16, 17, 18 } _____

F = { 5, 10, 15, 20, 25 } _____

Sets don't have to be just numbers! Describe these sets

I = { Colin, Brett, Conrad, Jamie, Ben } _____

R = { Mary, Joanne, Anita } _____

T = { June, July, January } _____

M = { January, May, July, August, December } _____

MORE SETS

Equal sets have exactly the same elements no matter what the order is

$A = \{ \text{DOG}, \text{CAT}, \text{CANARY} \}$

$B = \{ \text{CAT}, \text{CANARY}, \text{DOG} \}$

Set A has exactly the same elements as Set B therefore A = B

Write equal sets so that X = Y

X = { 1 , 2 , 3 , 4 } Y = { _____ }

X = { 15 , 17 , 19 , 21 } Y = { _____ }

X = { l , m , n , o , p } Y = { _____ }

X = { EVEN NUMBERS BETWEEN 0 & 10 } Y = { _____ }

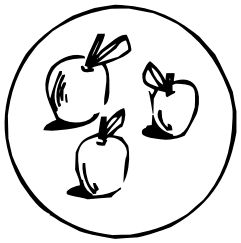
X = { THE FIRST 5 LETTERS OF THE ALPHABET } Y = { _____ }

X = { THE LAST 3 MONTHS OF THE YEAR } Y = { _____ }

X = { DAYS OF THE WEEK STARTING WITH T } Y = { _____ }

Equivalent Sets contain the same number of elements

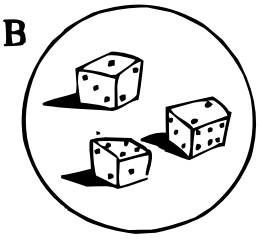
Set A



Number of Elements

_____

Set B

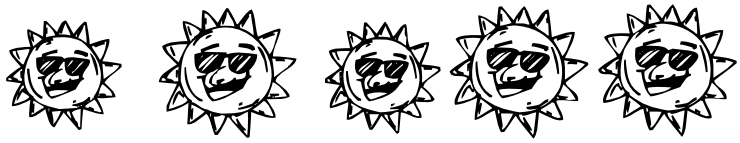


Number of Elements

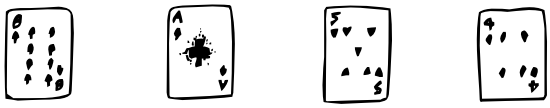
_____

Set A is equivalent to Set B

Write down the number of elements in each set in the box

U = {  }

V = { a , b , c }

W = {  }

X = {  }

Y = {  }

Z = { ○ ○ ○ ○ ○ ○ ○ }

Write down all the sets that are equivalent

_____

_____

List the elements in these sets

2 sports that use a bat — S = { _____ }

Even numbers between 0 & 10 — E = { _____ }

Boys in our class with red hair — R = { _____ }

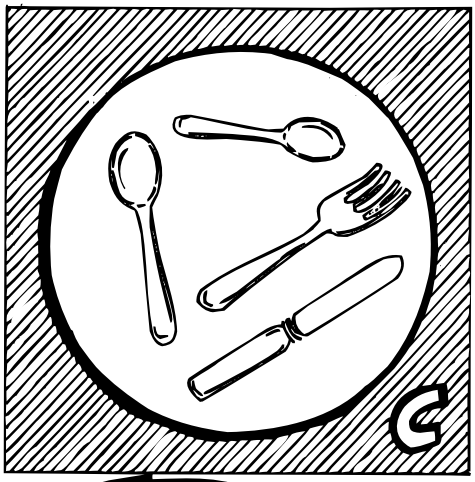
Girls in our class with black hair — B = { _____ }

Pupils in our class who walk to school — W = { _____ }

Now write down all the sets above that are equivalent

_____

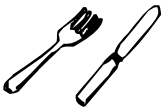
SUBSETS



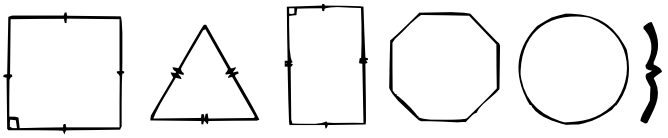
Set C is a set of cutlery

Any element from set C is called a Subset

A Knife is a subset of C  $\subset C$

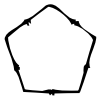
A Selection of elements from set C can also be called a Subset  $\subset C$

Study this set

$P = \{$  $\}$

Draw a circle around all the subsets of P

{  } {  } {  } {   }

{   } {   } {   }

Study these sets

$E = \{ 2, 4, 6, 8 \}$ $N = \{ 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 \}$

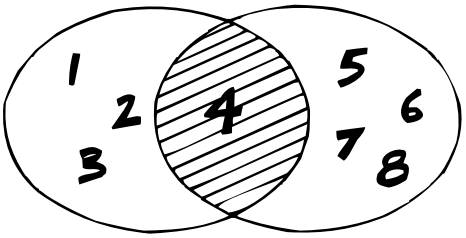
$O = \{ 1, 3, 5 \}$ $A = \{ 10, 1 \}$ $S = \{ 3, 5 \}$

Write TRUE or FALSE for the following

$E \subset N$ _____ $S \subset O$ _____ $A \subset E$ _____

$N \subset E$ _____ $A \subset N$ _____ $S \subset E$ _____

INTERSECTION SETS



In the diagram A= { 1, 2, 3, 4 }

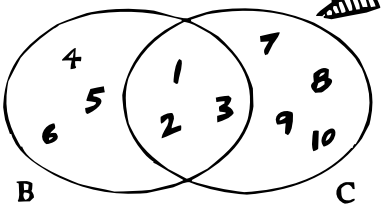
B = { 4, 5, 6, 7, 8 }

The shaded part is the intersection of set A and set B.

The number in this shaded part is 4.

It is written $A \cap B = \{ 4 \}$

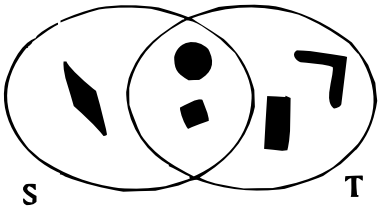
ANSWER THESE QUESTIONS



B = { _____ }

C = { _____ }

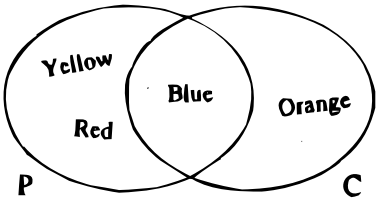
B ∩ C = { _____ }



S = { _____ }

T = { _____ }

S ∩ T = { _____ }

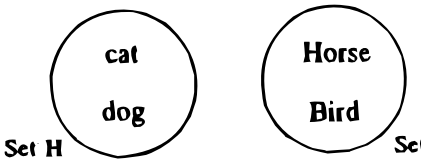


P = { _____ }

C = { _____ }

P ∩ C = { _____ }

If two sets have no elements that are the same then their intersection is an empty set { }



H = { cat dog } O = { Horse Bird }

H ∩ O = { }

Complete these by writing the intersections

X = { a b c d e f g } Y = { e f g h i j } X ∩ Y = { }

P = { $\frac{1}{2}$ $\frac{1}{4}$ $\frac{1}{8}$ } R = { $\frac{1}{10}$ $\frac{1}{20}$ $\frac{1}{2}$ } P ∩ R = { }

F = { 2 4 6 8 10 } O = { 1 2 3 4 5 6 } F ∩ O = { }

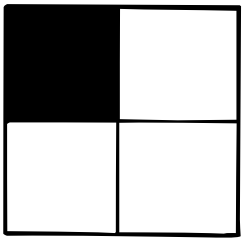
N = { ⬠ □ △ } W = { ⬡ □ ▱ } N ∩ W = { }

V = { a e i o u } C = { u v w x y z } V ∩ C = { }

- FRACTIONS -

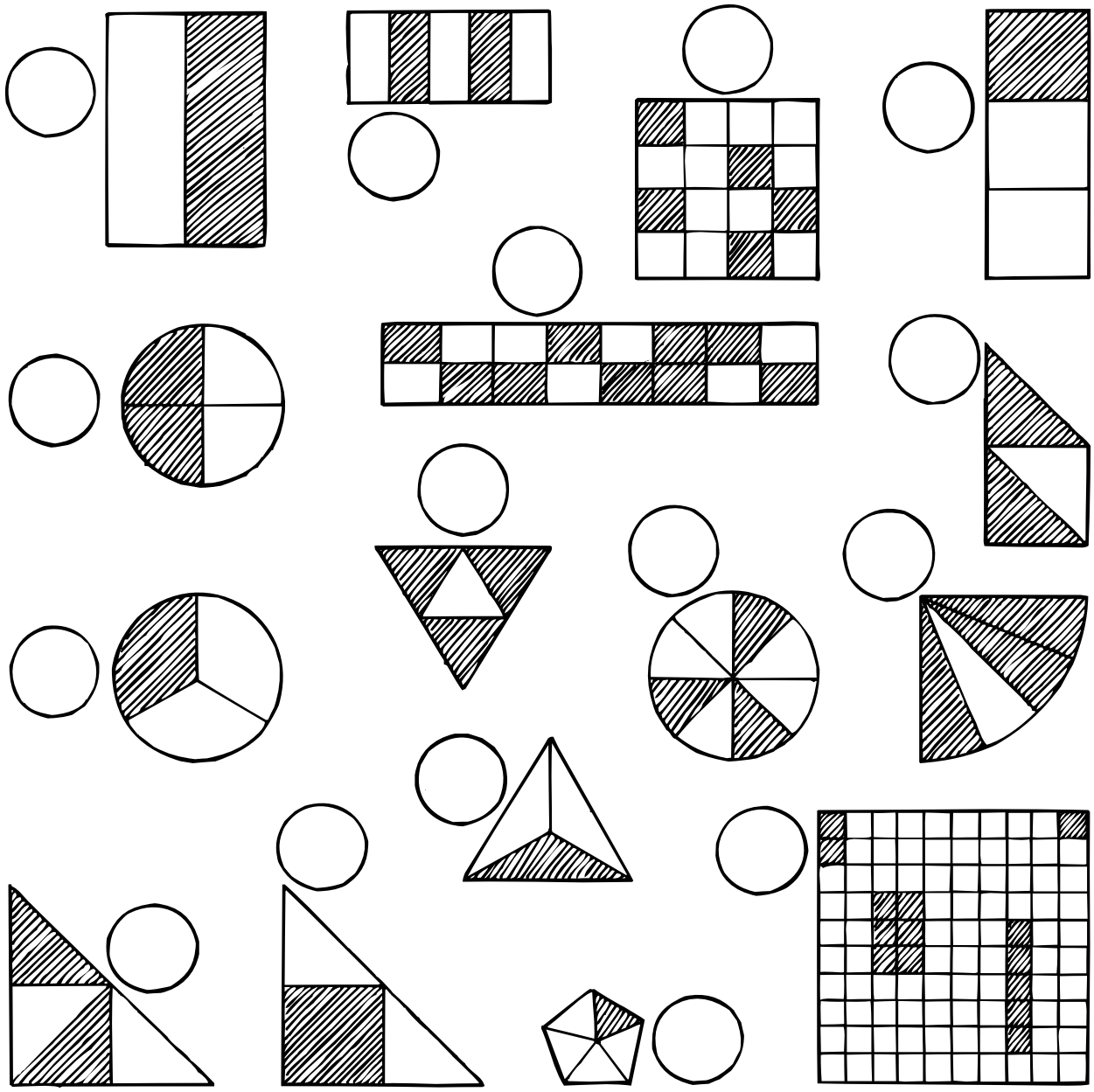
- A FRACTION IS A PART OF SOMETHING ! !

- HERE'S AN EXAMPLE

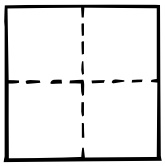
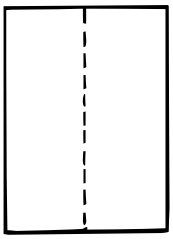
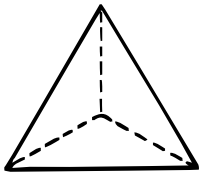
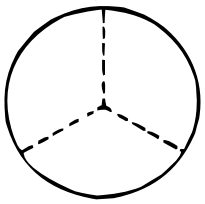
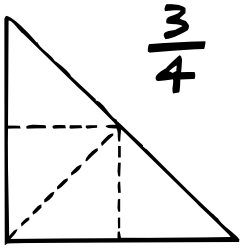
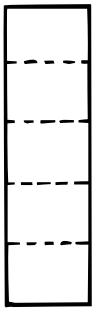
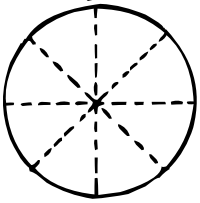
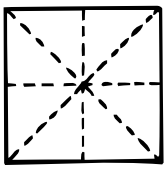
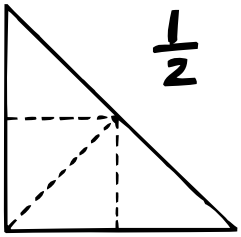
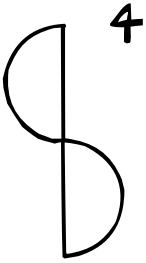
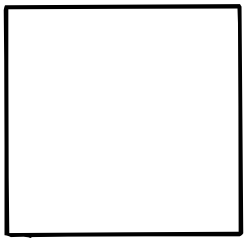
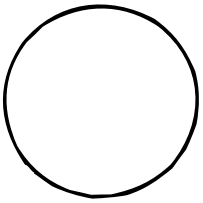
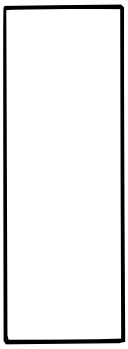
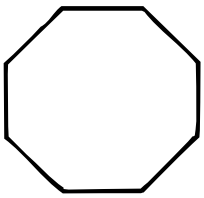
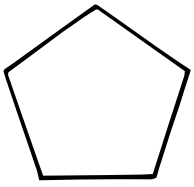
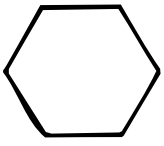


The square is divided into 4 parts.
One is shaded. Therefore $\frac{1}{4}$ is shaded.

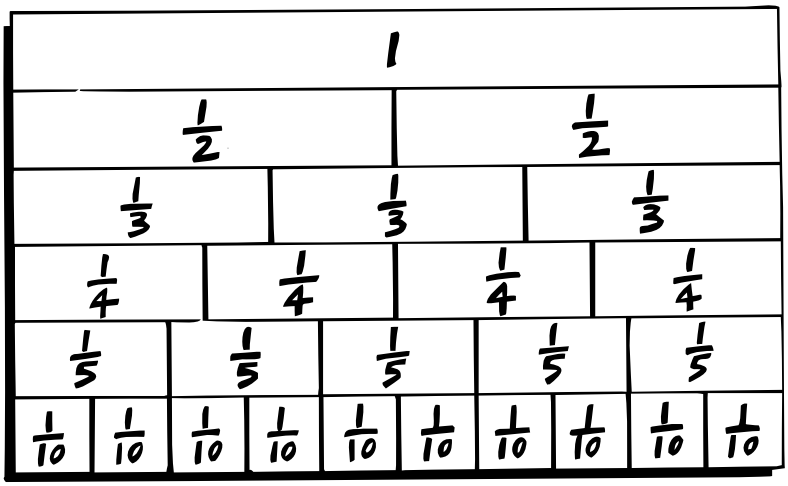
In the circle beside each shape, write the fraction of the shape that is shaded.



NOW SHADE IN THESE SHAPES TO SHOW EACH FRACTION!

$\frac{1}{4}$ 	$\frac{1}{2}$ 	$\frac{2}{3}$ 	$\frac{1}{3}$ 
$\frac{3}{4}$ 	$\frac{4}{5}$ 	$\frac{7}{8}$ 	$\frac{1}{4}$ 
$\frac{1}{2}$ 	$\frac{1}{4}$ 	$\frac{2}{3}$ 	$\frac{1}{2}$ 
$\frac{5}{5}$ 	$\frac{3}{8}$ 	$\frac{2}{5}$ 	$\frac{5}{6}$ 

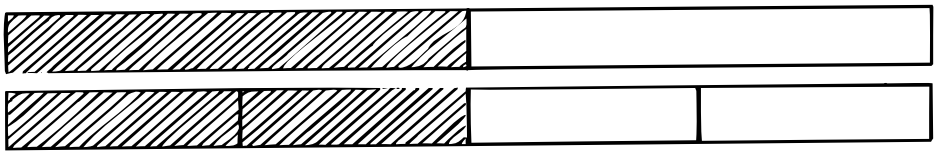
FURTHER FRACTIONS!



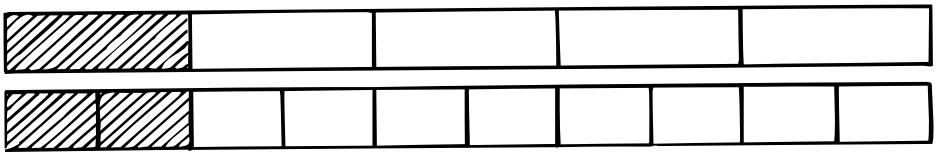
EQUIVALENT FRACTIONS are fractions that are the same.

$\frac{2}{4}$ is the same as $\frac{1}{2}$ and $\frac{5}{10}$!

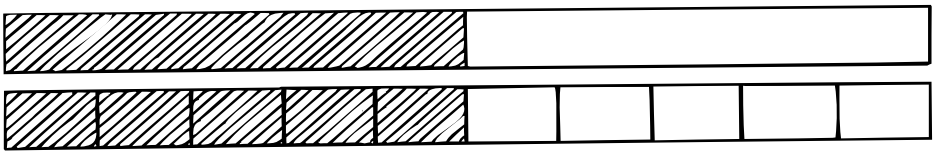
Using the diagrams, write down the equivalent fractions.
The first one is done for you !



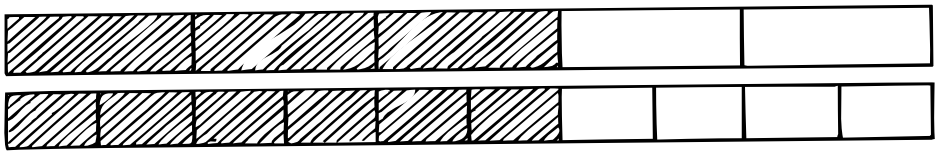
$\frac{1}{2} = \frac{2}{4}$



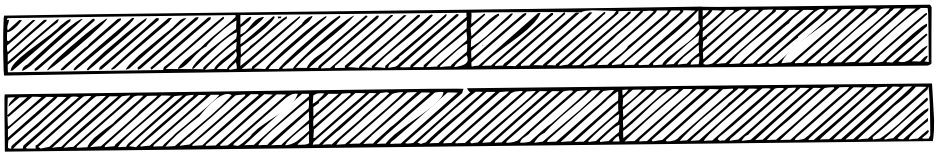
$\frac{1}{5} =$ _____



$\frac{1}{2} =$ _____



$\frac{3}{5} =$ _____

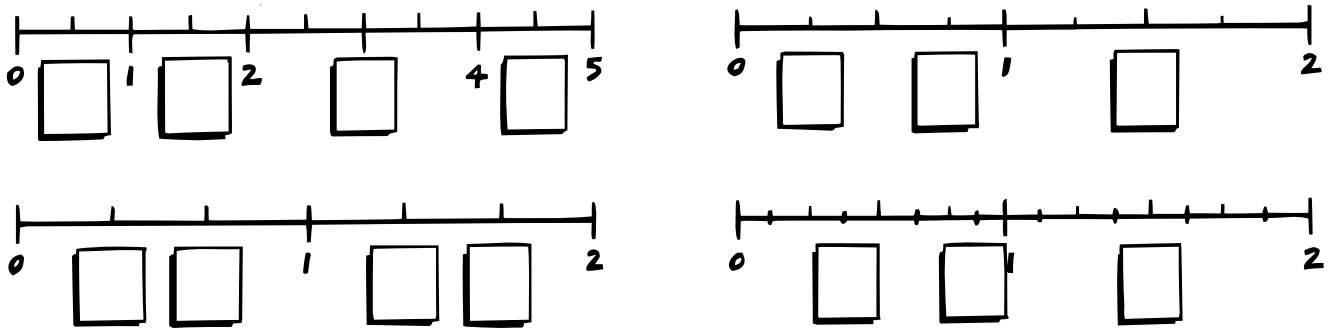


$\frac{4}{4} =$ _____

Now use a $<$, $>$ or $=$ between each fraction.

1	2	3	4
$\frac{1}{3}$ $\frac{1}{2}$	$\frac{1}{10}$ $\frac{1}{5}$	$\frac{1}{5}$ $\frac{1}{4}$	$\frac{1}{2}$ $\frac{2}{5}$
$\frac{2}{3}$ $\frac{8}{10}$	$\frac{4}{5}$ $\frac{3}{4}$	$\frac{1}{2}$ $\frac{5}{10}$	$\frac{3}{5}$ $\frac{3}{4}$
$\frac{2}{3}$ $\frac{9}{10}$	$\frac{3}{4}$ $\frac{5}{10}$	$\frac{3}{5}$ $\frac{2}{3}$	1 $\frac{9}{10}$

Fill in the boxes with the correct numbers.

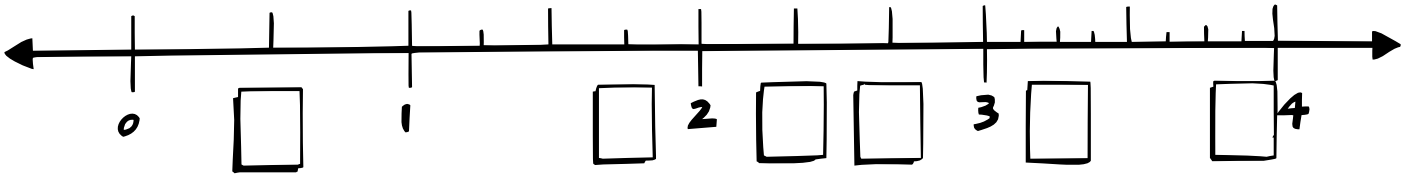


Fill in the boxes.

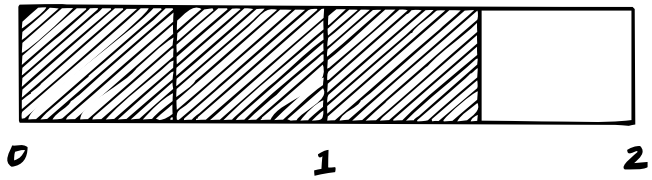
$\frac{4}{10} = \frac{\square}{5}$ $\frac{6}{8} = \frac{\square}{4}$ $\frac{5}{10} = \frac{\square}{2}$ $\frac{2}{6} = \frac{\square}{3}$

$\frac{8}{10} = \frac{\square}{5}$ $\frac{4}{8} = \frac{\square}{2}$ $\frac{3}{4} = \frac{\square}{12}$ $\frac{3}{5} = \frac{\square}{20}$

$\frac{1}{2} = \frac{\square}{40}$ $\frac{7}{10} = \frac{\square}{20}$ $\frac{4}{4} = \frac{\square}{\square}$ $\frac{6}{8} = \frac{\square}{\square}$



-HOW DO YOU CHANGE $1\frac{1}{2}$ INTO A FRACTION?



There are 3 lots of $\frac{1}{2}$ in $1\frac{1}{2}$ so $1\frac{1}{2}$ into a fraction $= \frac{3}{2}$

Now write these as fractions.

$1\frac{1}{4} = \frac{5}{\quad}$	$1\frac{2}{3} = \frac{\quad}{3}$	$1\frac{3}{5} = \frac{\quad}{\quad}$
$2\frac{1}{2} = \frac{\quad}{\quad}$	$1\frac{3}{4} = \frac{\quad}{\quad}$	$2\frac{1}{10} = \frac{\quad}{\quad}$

Write these fractions as mixed numbers.

$\frac{7}{4} = 1\frac{\quad}{\quad}$	$\frac{7}{3} = \quad$	$\frac{13}{10} = \quad$
$\frac{10}{3} = \quad$	$\frac{5}{2} = \quad$	$\frac{12}{5} = \quad$

-EQUIVALENT FRACTIONS

Equivalent fractions are fractions that are the same.

Here are some equivalent fractions for $\frac{3}{4}$ $E = \{ \frac{3}{4}, \frac{6}{8}, \frac{9}{12}, \frac{12}{16}, \frac{15}{20} \}$

Fill in the gaps to find the equivalent fractions.

$\frac{1}{2} = \{ \frac{\quad}{4}, \frac{\quad}{6}, \frac{\quad}{8}, \frac{\quad}{10}, \frac{\quad}{12}, \frac{\quad}{14} \}$

$\frac{1}{3} = \{ \frac{\quad}{6}, \frac{\quad}{9}, \frac{\quad}{12}, \frac{\quad}{15}, \frac{\quad}{18} \}$

$\frac{1}{4} = \{ \frac{\quad}{8}, \frac{\quad}{12}, \frac{\quad}{16} \}$

$\frac{1}{5} = \{ \frac{\quad}{10}, \frac{\quad}{15}, \frac{\quad}{20}, \frac{\quad}{100}, \frac{\quad}{500}, \frac{\quad}{1000} \}$

$\frac{1}{6} = \{ \frac{\quad}{12}, \frac{\quad}{18}, \frac{\quad}{24}, \frac{\quad}{30}, \frac{\quad}{36} \}$

Adding and Subtracting Fractions!

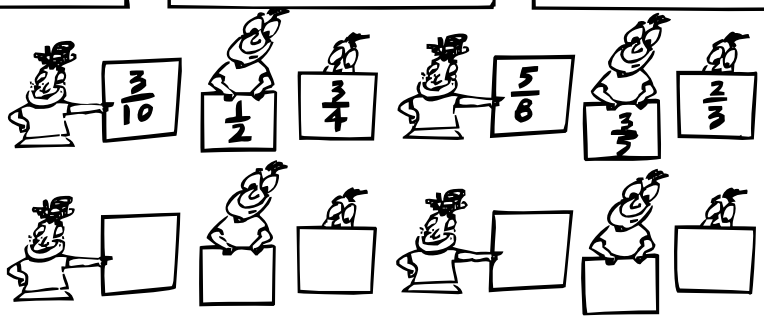
Each fraction must have the same bottom line.
Try these. The first two are done for you !

$\frac{1}{5} + \frac{1}{5} = \boxed{\frac{2}{5}}$	$\frac{1}{3} + \frac{1}{3} = \boxed{\frac{2}{3}}$	$\frac{1}{5} + \frac{2}{5} = \square$	$\frac{2}{4} + \frac{1}{4} = \square$
$\frac{3}{5} + \frac{1}{5} = \square$	$\frac{1}{7} + \frac{2}{7} = \square$	$\frac{4}{6} + \frac{1}{6} = \square$	$\frac{3}{10} + \frac{6}{10} = \square$
$\frac{5}{8} + \frac{2}{8} = \square$	$\frac{2}{3} - \frac{1}{3} = \square$	$\frac{4}{5} - \frac{2}{5} = \square$	$\frac{4}{10} - \frac{3}{10} = \square$
$\frac{7}{8} - \frac{4}{8} = \square$	$\frac{9}{10} - \frac{6}{10} = \square$	$\frac{2}{2} - \frac{1}{2} = \square$	$\frac{3}{4} - \frac{2}{4} = \square$

These examples need two steps.

$\frac{3}{4} + \frac{4}{4} = \boxed{\frac{7}{4}}$	$\frac{2}{3} + \frac{3}{3} = \square$	$\frac{4}{5} + \frac{5}{5} = \square$	$\frac{2}{5} + \frac{6}{5} = \square$
$= \boxed{1\frac{3}{4}}$	$= \square$	$= \square$	$= \square$
$\frac{1}{3} + \frac{4}{3} = \square$	$\frac{2}{4} + \frac{3}{4} = \square$	$\frac{7}{8} + \frac{5}{8} = \square$	$\frac{7}{10} + \frac{6}{10} = \square$
$= \square$	$= \square$	$= \square$	$= \square$

Now put these **FRACTIONS** into their correct order from smallest to largest.



PERCENTAGES %

Percent means divided by 100.

10% means 10 out of 100 or $\frac{10}{100}$ or 0.1

27% means 27 out of 100 or $\frac{27}{100}$ or 0.27

- Write these percentages as fractions.

15% ___	25% ___	30% ___	12% ___
75% ___	60% ___	45% ___	99% ___
100% ___	12.5% ___	0.5% ___	0.1% ___

- Write these fractions as percentages.

$\frac{10}{100}$ = ___% $\frac{16}{100}$ = ___% $\frac{25}{100}$ = ___% $\frac{50}{100}$ = ___%

$\frac{3}{20}$ = ___ = ___% $\frac{10}{20}$ = ___ = ___% $\frac{7}{10}$ = ___ = ___%

$\frac{3}{50}$ = ___ = ___% $\frac{9}{25}$ = ___ = ___% $\frac{4}{5}$ = ___ = ___%

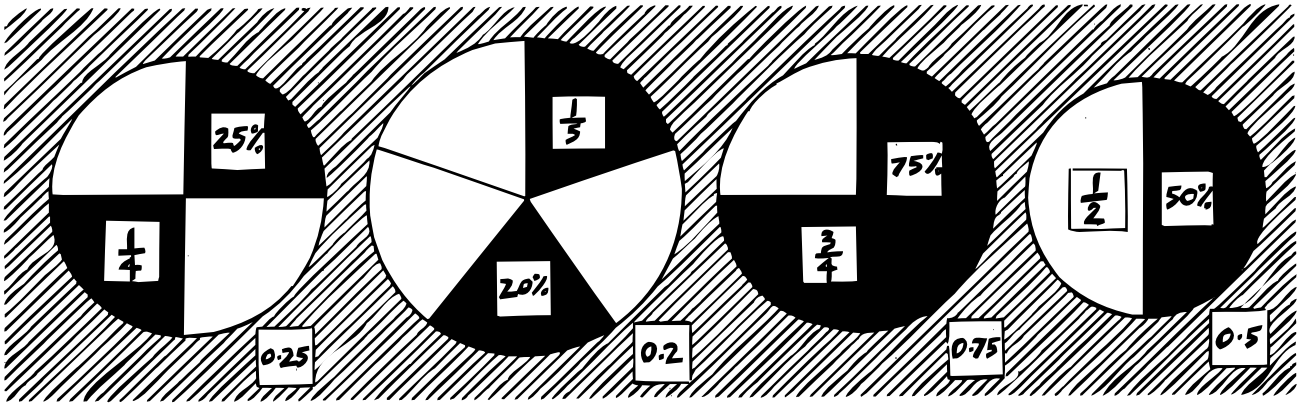
- Write these percentages as decimals.

27% = 0.___	60% = 0.___	25% = 0.___	50% = 0.___
30% = 0.___	45% = 0.___	19% = 0.___	27% = 0.___

- Write these decimals as percentages.

0.54 = ___%	0.82 = ___%	0.55 = ___%	0.33 = ___%
0.21 = ___%	0.95 = ___%	0.6 = ___%	0.17 = ___%
0.05 = ___%	0.75 = ___%	0.02 = ___%	0.37 = ___%

Equivalent percentages, fractions, and decimals.



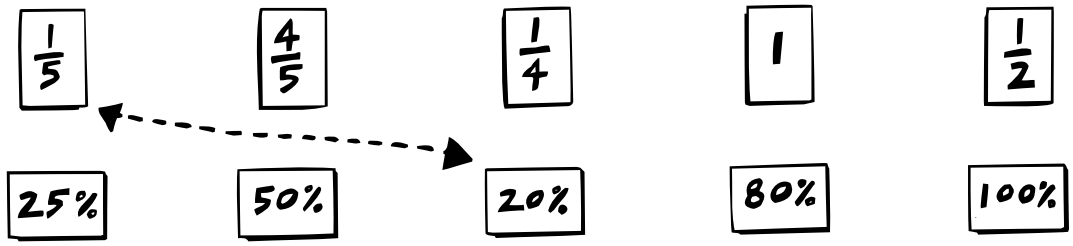
Write the correct numerals in the spaces.

1. 50% = ___/100 = ___/2
2. 25% = ___/100 = ___/4
3. 75% = ___/100 = ___/4
4. 20% = ___/100 = ___/5

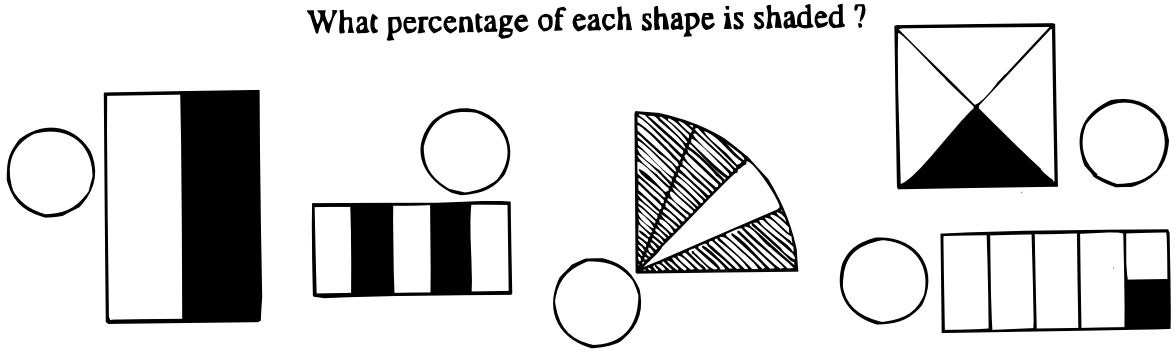
Complete this table.

Percentage	10%	20%				60%	70%	80%		
Tenths			3/10	4/10	5/10				9/10	10/10

Match up the percentages with the fractions.



What percentage of each shape is shaded ?



PERCENTAGES OF NUMBERS!

1

To find 50% of 10 : $\frac{50}{100} \times 10$

or $\frac{1}{2}$ of $10 = 5$

$\therefore$ 50% of 10 is 5

Find 50% of :

20	26	34	50	68	74	90	99

2

Find 25% of 28 : $\frac{25}{100} \times 28$

or $\frac{1}{4} \times 28 = \frac{28}{4}$

$= 7$

$\therefore$ 25% of 28 is 7

Find 25% of :

12	20	36	40	80	200	1000	50

3

Find 30% of 20 : $\frac{30}{100} \times 20$

or $\frac{3}{10} \times 20 = \frac{60}{10}$

$= 6$

$\therefore$ 30% of 20 is 6

Find 30% of :

21	30	36	60	100	210	1000	150

-PERCENTAGES OF QUANTITIES

1

- A woman's income is $500 per week.
- She gets a 10% raise.
- How much does she now earn ?

THIS MEANS 10% OF 500

$= \frac{10}{100} \times 500$

or $\frac{1}{10} \times 500$

$= 50$

∴ she gets a $50 raise and now earns $550 !

2

- A shop offers a discount of 30% off all its prices.
- You see a telephone for $150.

THIS MEANS 30% OF 150

$= \frac{30}{100} \times 150$

or $\frac{3}{10} \times 150$

$= 45$

How much is the discount ?

You get a $45 discount and only pay ($150 - $45) $105

3

- Your parents decide to give you a 20% raise in your allowance.
- You get $5 a week now.
- How much will you get after the raise ?

.....

.....

.....

.....

.....

.....

4

- You save $600 and spend 30% of it.
- How much do you have left ?

.....

.....

.....

5

- A factory has 1200 employees.
- 75% of them are women.
- How many men and women work at the factory ?

.....

.....

6

- The high score on a video game is 1200.
- You score 10% less than this.
- What is your score ?

.....

.....

.....

7

- You eat 20% of the chocolates in a box that has 50 chocolates
- How many chocolates did you eat ?
- How many are left ?

.....

.....

DECIMALS

Our numbering system is based on tens. Each digit has a place value.

Decimals include numbers less than 1.

Here are some decimal fractions

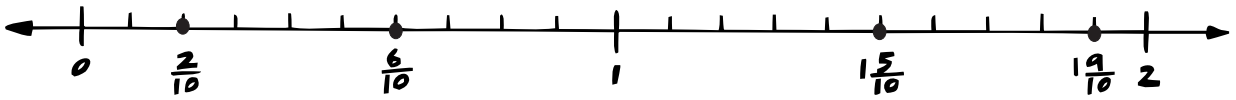
$0{\cdot}3 = \frac{3}{10}$ $0{\cdot}7 = \frac{7}{10}$ $1{\cdot}6 = 1\frac{6}{10}$

$0{\cdot}11 = \frac{11}{100}$ $0{\cdot}135 = \frac{135}{1000}$

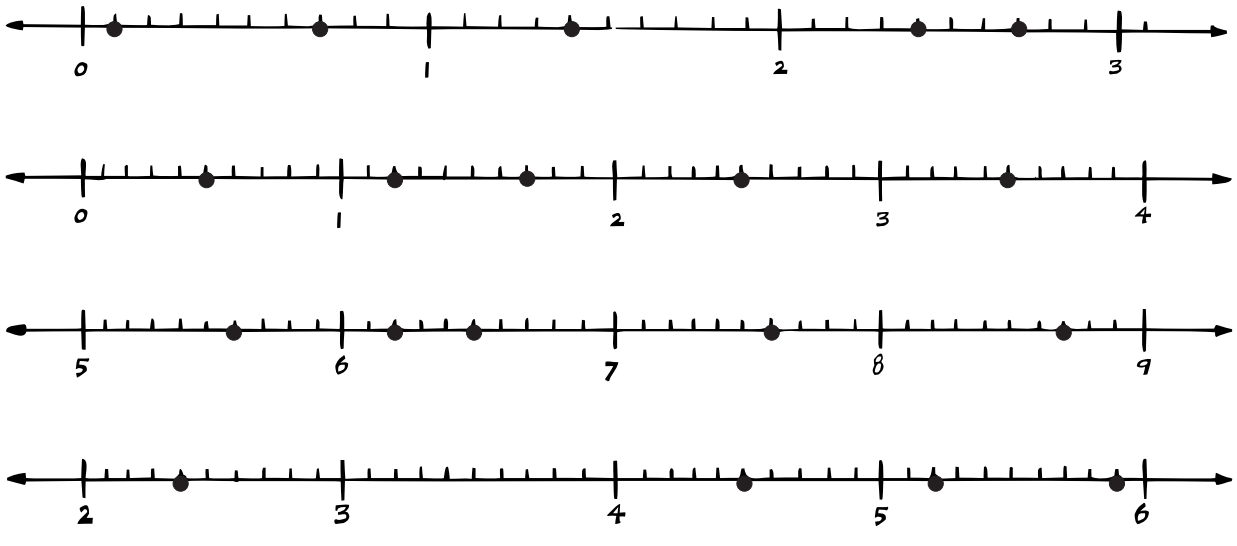
Write these decimals as fractions

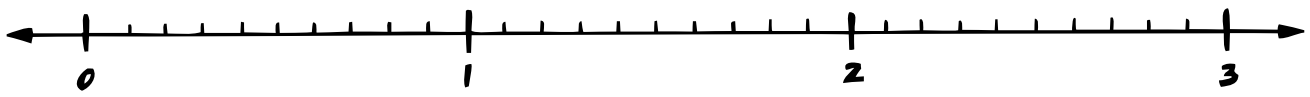
0·4 ____	0·3 ____	0·6 ____	0·5 ____	3·2 ____
2·7 ____	1·4 ____	0·1 ____	1·1 ____	2·0 ____
0·01 ____	0·43 ____	0·62 ____	0·22 ____	0·05 ____
1·21 ____	4·05 ____	6·00 ____	7·12 ____	1·11 ____

The number line below is divided into tenths. Different points are shown.



What numbers are shown on these number lines





Show these decimal numbers on the number line above.

0.2 0.6 0.9 1.4 1.7 2.5

REMEMBER

> means "is greater than"

< means "is less than"

Put in the > or < signs

0·5 __ 0·2	0·6 __ 0·9
0·55 __ 0·5	2·1 __ 1·9
2·44 __ 2·5	6·09 __ 6·1
0·24 __ 0·9	0·76 __ 0·5
0·99 __ 0·999	0·83 __ 0·81

NOW WRITE THESE FRACTIONS AS DECIMALS!

$\frac{9}{10} =$ ___	$\frac{4}{10} =$ ___	$\frac{5}{10} =$ ___	$\frac{20}{100} =$ ___
$\frac{36}{100} =$ ___	$\frac{6}{100} =$ ___	$\frac{45}{10} =$ ___	$\frac{800}{100} =$ ___
$\frac{37}{10} =$ ___	$\frac{14}{100} =$ ___	$\frac{416}{100} =$ ___	$\frac{12}{100} =$ ___
$\frac{1}{100} =$ ___	$\frac{16}{10} =$ ___	$\frac{125}{10} =$ ___	$\frac{190}{100} =$ ___

DECIMAL ADDITION AND SUBTRACTION

ADDITION

Rule: Keep the decimal points under each other.
No calculators for this page

1

0.2 + 0.7 =	0.6 + 0.2 =	1.4 + 2.3 =	6.5 + 3.4 =	2.1 + 3.8 =	7.4 + 2.6 =

2

4.4 + 7.3 =	3.7 + 9.2 =	4.5 + 6.4 =	7.1 + 6.8 =	5.2 + 5.5 =	6.6 + 7.3 =

3

3.7 + 2.4 =	2.5 + 1.8 =	4.3 + 2.9 =	7.7 + 1.8 =	6.4 + 2.8 =	4.8 + 4.4 =

4

4.6 + 5.6 =	3.7 + 8.6 =	6.6 + 5.8 =	5.8 + 6.7 =	3.4 + 9.8 =	7.9 + 6.8 =

SUBTRACTION

5

0.9 − 0.4 =	2.7 − 1.4 =	3.3 − 2.1 =	4.5 − 2.3 =	3.4 − 1.1 =

6

4.3 − 1.5 =	3.2 − 0.7 =	2.7 − 1.9 =	4.1 − 2.6 =	3.4 − 2.8 =	6.2 − 1.4 =

7

19.3 − 7.3 =	17.2 − 4.6 =	15.1 − 3.5 =	16.7 − 4.9 =	18.3 − 2.7 =	12.1 − 1.7 =

8

34.2 − 6.5 =	14.5 − 9.7 =	27.1 − 18.6 =	29.4 − 19.7 =	32.1 − 27.4 =	16.5 − 8.7 =

9

136 + 125 =	224 + 117 =	148 + 123 =	141 + 249 =	278 + 115 =	164 + 129 =

10

153 − 116 =	192 − 159 =	234 − 107 =	211 − 103 =	251 − 136 =	222 − 115 =

COMPLETE THESE TABLES

×	20
10	
20	
50	
100	

×	16
10	
100	
200	
500	

×	22
5	
10	
20	
100	

×	18
100	
50	
10	
5	

×	27
20	
40	
80	
100	

×	35
10	
20	
30	
50	

Write a > or < to make each sentence true

10 × 35	☐	300	20 × 17	☐	350
15 × 100	☐	155	40 × 80	☐	320
5 × 43	☐	200	10 × 82	☐	700
5 × 16	☐	50	100 × 5	☐	490
10 × 12	☐	150	20 × 12	☐	300
100 × 6	☐	60	15 × 20	☐	350

÷ DIVISION REVISION

No calculators for this page

EXAMPLES ⇨ $9.7 \times 10 = 97$ $58.119 \times 100 = 5811.9$

$6.4 \times 10 =$ _____ $12.7 \times 10 =$ _____

$3.24 \times 10 =$ _____ $5.771 \times 10 =$ _____

$0.0514 \times 100 =$ _____ $6.0892 \times 100 =$ _____

$9.2 \times 100 =$ _____ $0.6 \times 1000 =$ _____

$0.0957 \times 1000 =$ _____ $87.24 \times 1000 =$ _____

DIVIDING DECIMALS BY 10, 100 & 1000

Rule : Move the decimal point to the left

EXAMPLES ⇨ $627 \div 10 = 62.7$ $582 \div 100 = 5.82$

$3.4 \div 10 =$ _____ $2.7 \div 10 =$ _____

$0.55 \div 10 =$ _____ $12.23 \div 10 =$ _____

$16.3 \div 100 =$ _____ $34.88 \div 100 =$ _____

$410 \div 100 =$ _____ $79 \div 1000 =$ _____

$548.1 \div 1000 =$ _____ $736.63 \div 1000 =$ _____

START NOW!

$64 \times 10 =$ _____ $12.6 \times 10 =$ _____

$9.65 \times 100 =$ _____ $0.543 \times 100 =$ _____

$2.7 \times 10 =$ _____ $8.421 \times 1000 =$ _____

MULTIPLYING DECIMALS

Rule: Count how many decimal places.

The answer must have that many places

EXAMPLES

4.2 x 3 = 12.6
1 decimal place

2.4 x 1.2 = 2.88
2 decimal places

2.14 x 2 = 4.28
2 decimal places

3.11 x 0.5 = 1.555
3 decimal places

Find the answers
(calculators optional)

1

3·2 × 6 =	4·1 × 5 =	5·4 × 2 =	2·1 × 8 =	4·4 × 2 =	3·2 × 4 =

2

4·2 × 6 =	3·3 × 4 =	6·4 × 3 =	5·5 × 5 =	4·2 × 8 =	9·3 × 5 =

3

2·7 × 8 =	4·6 × 5 =	9·3 × 8 =	5·7 × 6 =	3·9 × 6 =	8·4 × 7 =

4

6·1 × 0·5 =	3·7 × 0·2 =	4·4 × 0·3 =	6·2 × 0·5 =	5·3 × 1·6 =	4·4 × 1·3 =

5

35·6 × 4 =	17·21 × 8 =	16·22 × 7 =	5·21 × 9 =	6·71 × 3 =	13·21 × 5 =

6

16·6 × 2·2 =	14·5 × 3·7 =	4·9 × 2·3 =	5·4 × 1·7 =	6·2 × 3·5 =	7·8 × 4·4 =

Now use your calculator

0·607 × 0·5 =	4·71 × 6·45 =	3·78 × 2·11 =	6·55 × 3·07 =	5·23 × 9·58 =

19 × 34·785 =

24 × 16·217 =

16·5 × 18 =

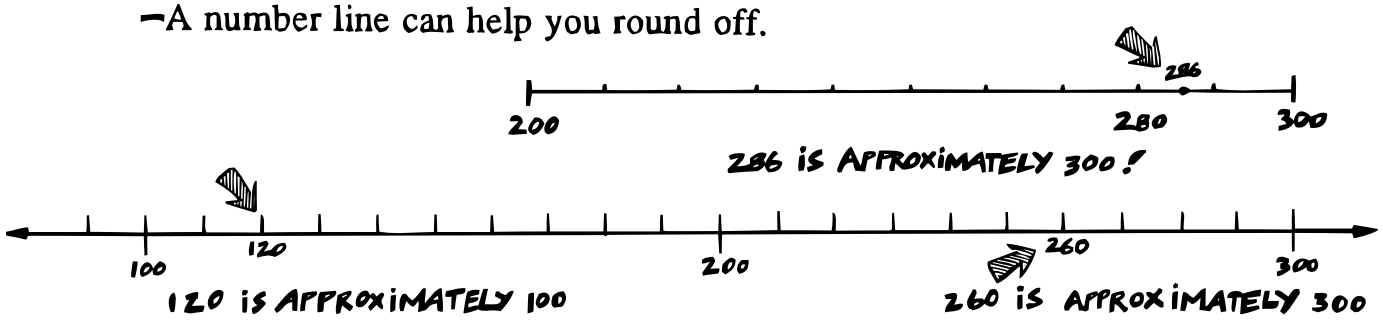
27·5 × 13·9 =

147 × 2·615 =

19·8 × 15·27 =

ROUNDING OFF!

–A number line can help you round off.



Round off these numbers to the nearest 100.

330	____	690	____	407	____	85	____
117	____	263	____	470	____	905	____
140	____	158	____	499	____	50	____

Round off these numbers to the nearest 10.

87	____	42	____	144	____	236	____
24	____	16	____	391	____	246	____
329	____	465	____	198	____	372	____

Round off these decimals to the nearest whole number.

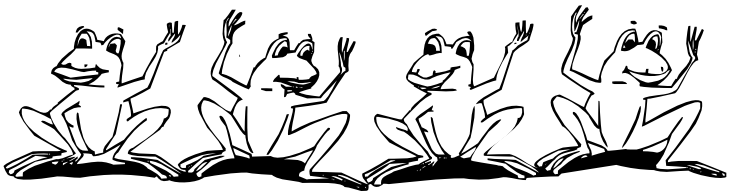
80·6	____	47·2	____	6·6	____	15·1	____
12·7	____	18·55	____	27·31	____	14·2	____
19·7	____	8·6	____	15·5	____	14·49	____

Rounding to the nearest 100.

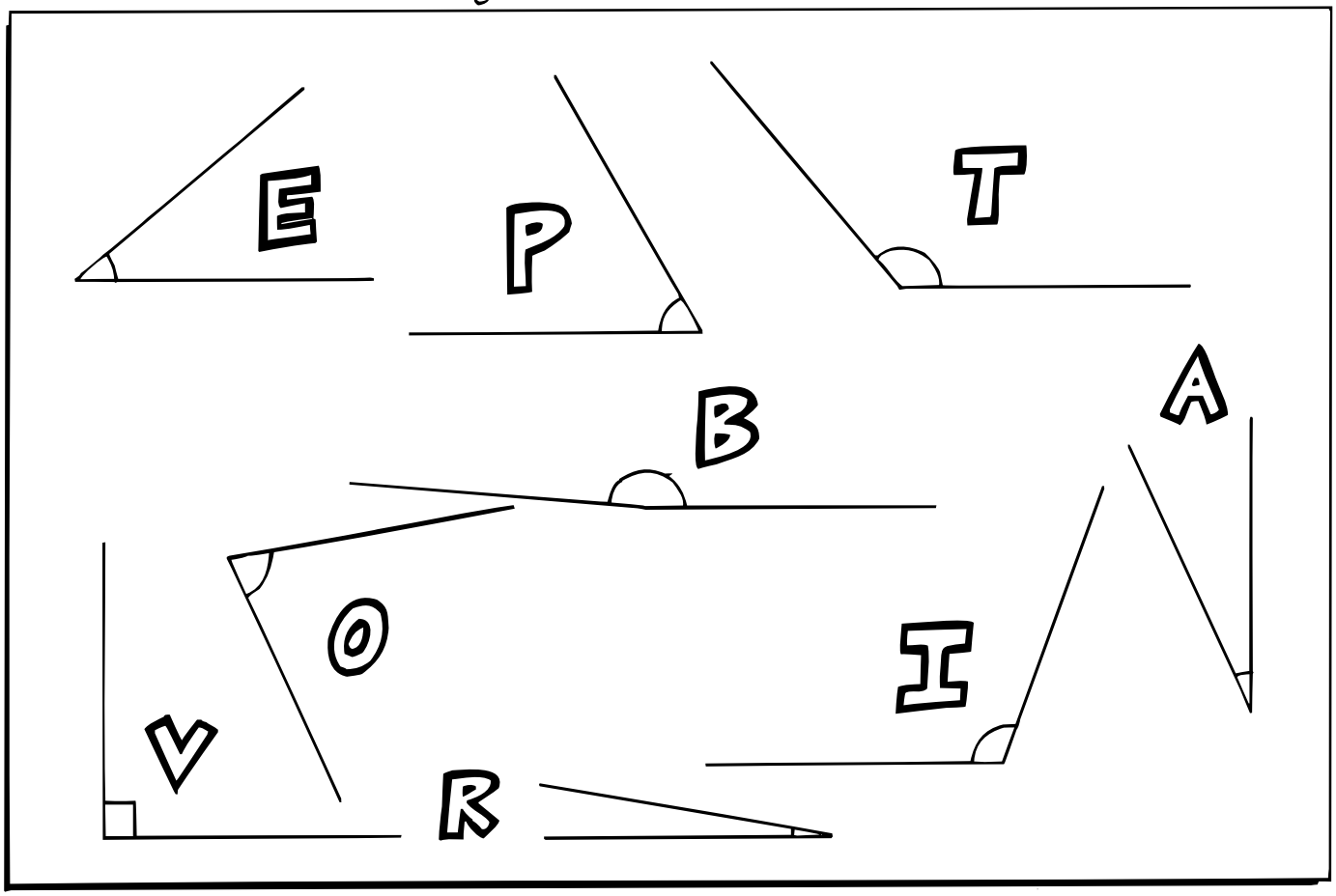
Circle all those numbers that would round off to 400.
Underline all those numbers that would round off to 500.

496	460	370	407
546	450	531	355

FROGY FUN!



Measure the angles. Use the letters to work out the answer to the codes.



1 What does a frog with long ears say ?

10	25	175	175	110	130		10	25	175	175	110	130

2 What does a bandit frog say ?

10	75	175	110	130		10	75	175	110	130

3 What does a frog tailor say ?

10	110	60	110	130		10	110	60	110	130

4 What does a frog engineer say ?

10	110	90	40	130		10	110	90	40	130

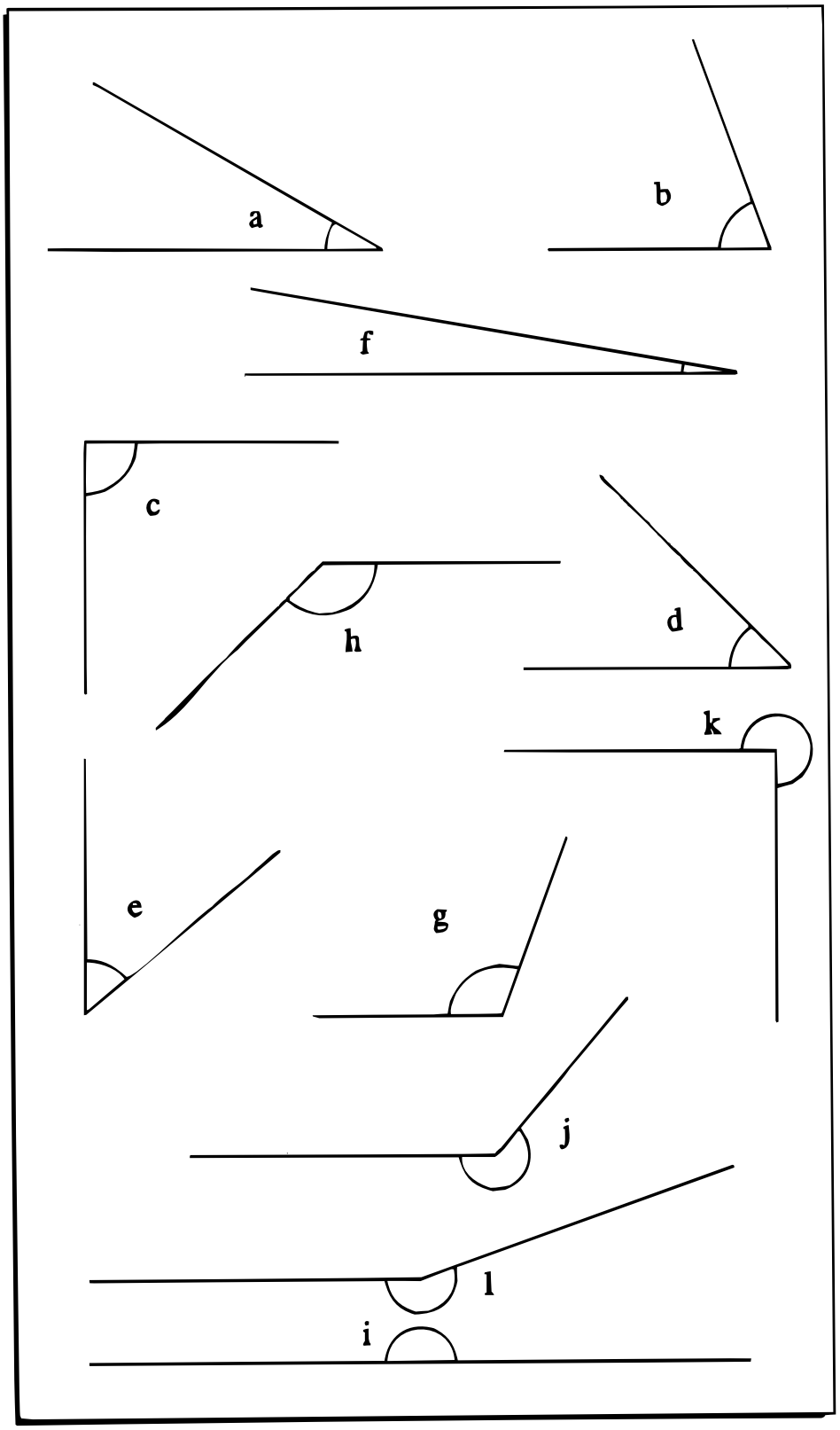
5 What does a computer frog say ?

10	75	175	75	130		10	75	175	75	130

ESTIMATING ANGLES

An estimate is a guess. (But not a wild way out guess.)

Estimate the size of each angle, then using your protractor measure the angle and compare it with your guess.

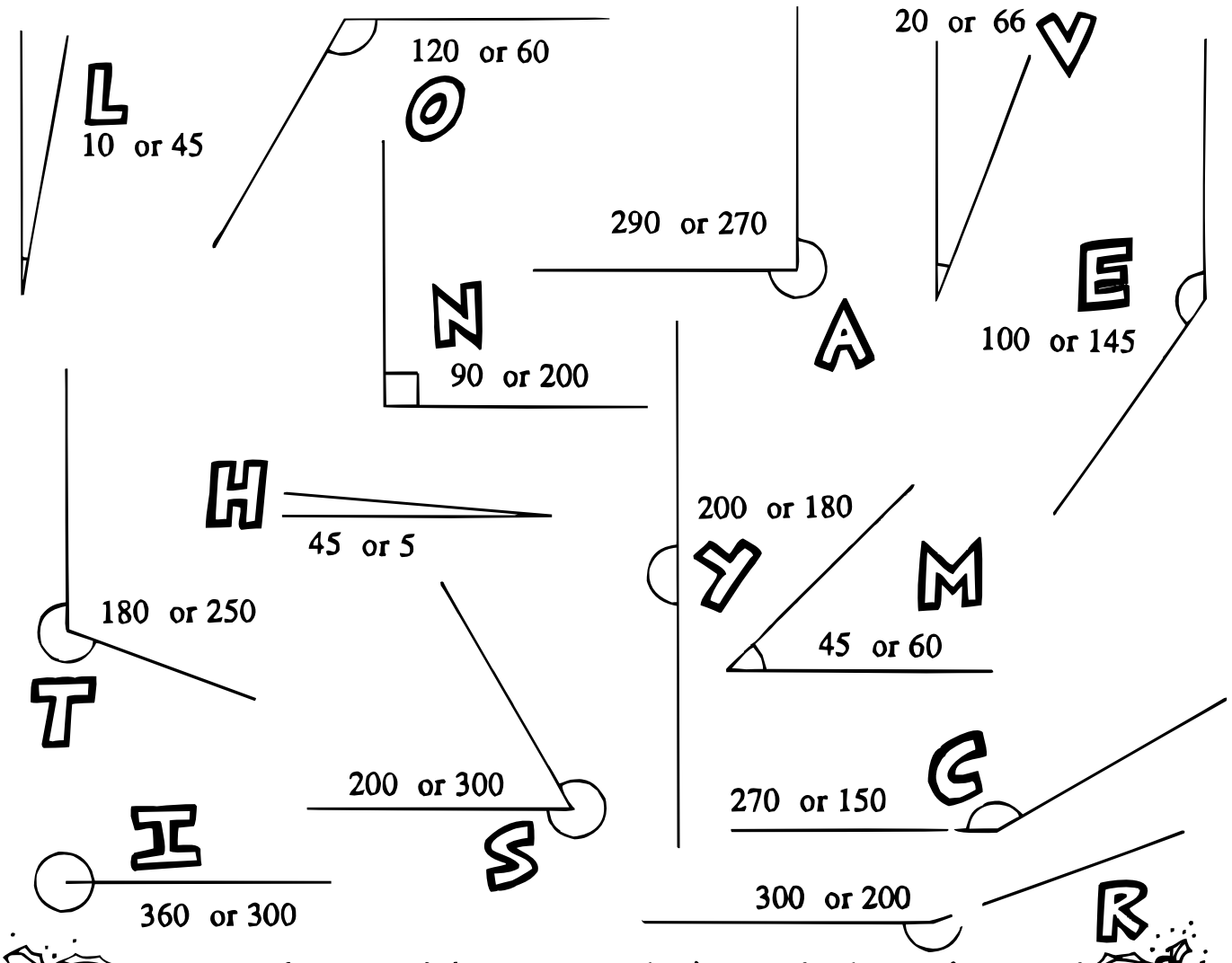


	ESTIMATE	MEASURE
a		
b		
c		
d		
e		
f		
g		
h		
i		
j		
k		
l		

CHRISTMAS QUIZZERS

Choose which angle size is the best estimate of each angle.

Match up the letter of the angle with the answers in the codes



Who is Santa Claus's wife ?

45	270	200	180	150	5	200	360	300	250	45	270	300		

What did Adam say the day before Christmas ?

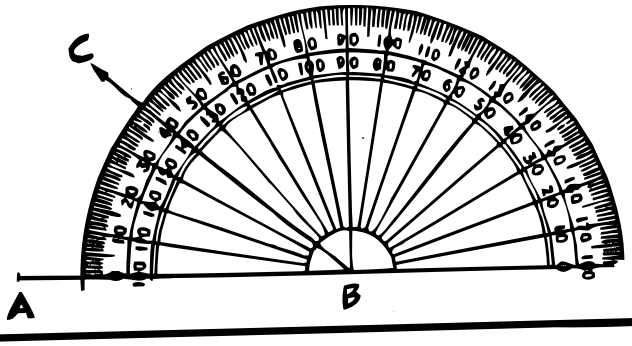
360	250	300	150	5	200	360	300	250	45	270	300	145	20	145

Where does Santa stay when he is away from home ?

360	90	270	5	120	5	120	5	120	250	145	10			

DRAWING ANGLES

Draw an angle ABC of 40°



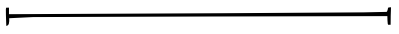
STEP 1 Draw line AB

STEP 2 Place your protractor on AB as above.

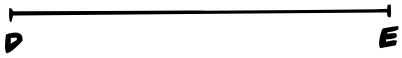
STEP 3 Count from 0 to 40 and mark the spot.

STEP 4 Remove the protractor and draw line BC

DRAW ANGLE ABC

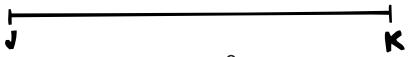


1 Draw ABC = 30°

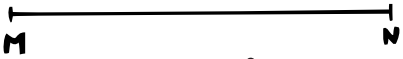


2 Draw DEF = 70°

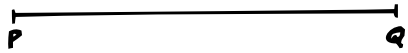
3 Draw GHI = 85°



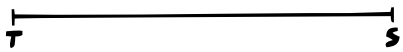
4 Draw JKL = 110°



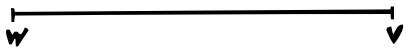
5 Draw MNO = 125°



6 Draw PQR = 150°



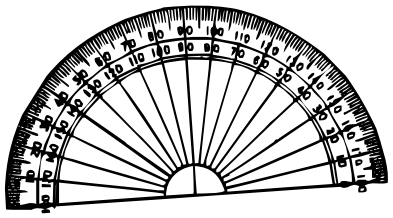
7 Draw STU = 30°



8 Draw VWX = 100°

9 Draw JXZ = 90°

MORE ANGLES!



Using your protractor draw angles at the points given

35°

90°

45°

110°

75°

130°

40°

80°

150°

30°

50°

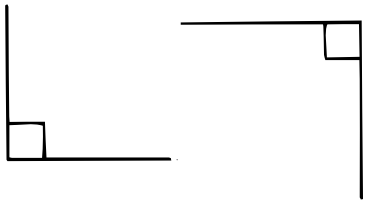
60°

60°

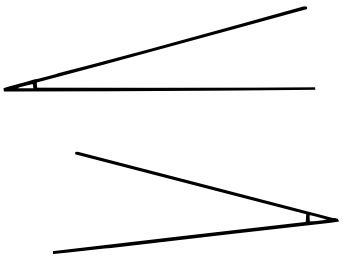
HOW DID YOU MEASURE UP?

TYPES OF ANGLES

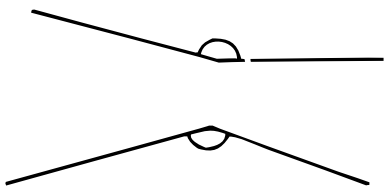
1 Right angles



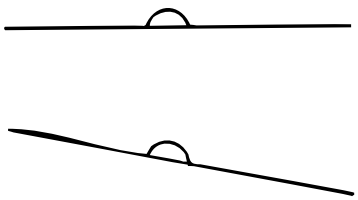
2 Acute angles



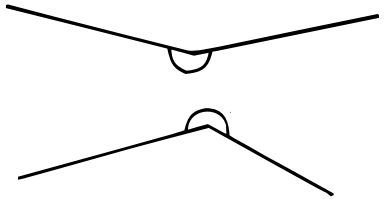
3 Obtuse angles



4 Straight angles



5 Reflex angle



Write down an explanation for each.

- A right angle _____

_____

- An acute angle _____

_____

- An obtuse angle _____

_____

- A straight angle _____

_____

- A reflex angle _____

_____

NOW IT'S YOUR TURN!

Draw 3 reflex angles

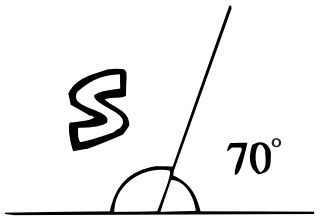
Draw 2 right angles

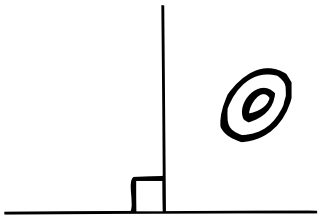
Draw 4 acute angles

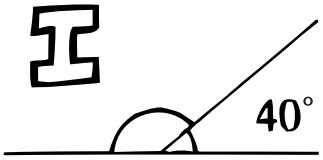
Draw 1 straight angle

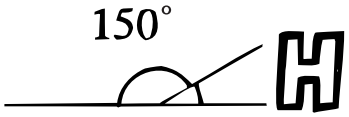
Draw 2 obtuse angles

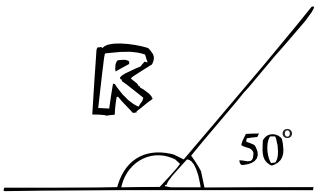
Find the missing angles and crack the code.

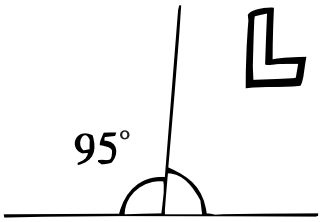


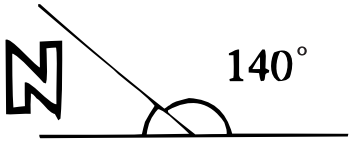


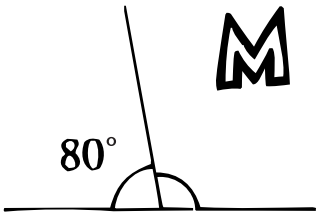


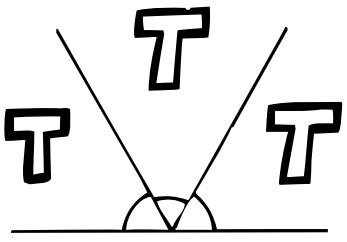


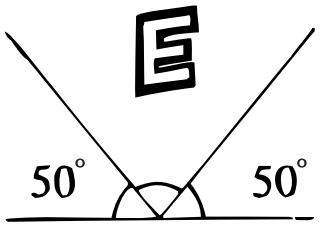


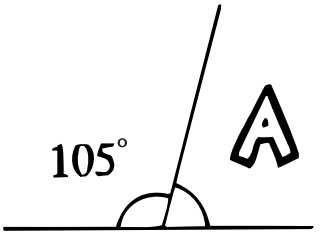


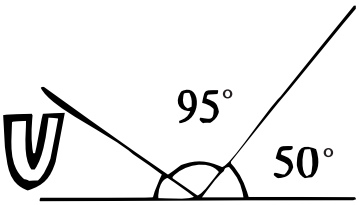


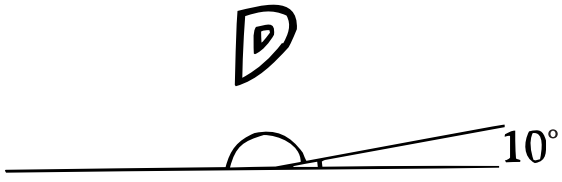


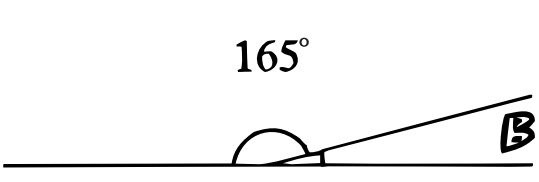










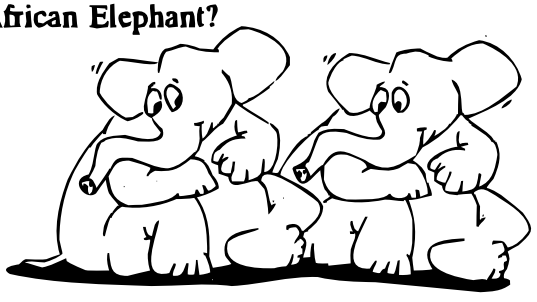


What is the difference between an Indian Elephant and an African Elephant?

75	15	90	35	60	60	30	130	80	80

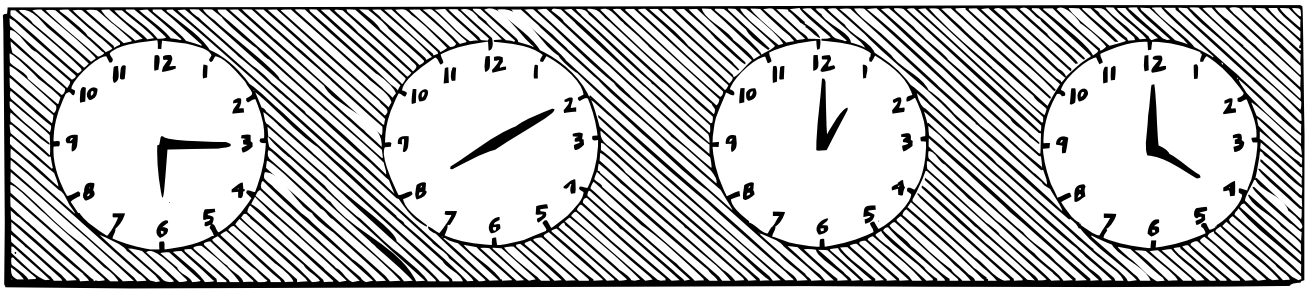
60	30	90	35	110	75	40	170

100	140	85	80	110



-GEOMETRY-

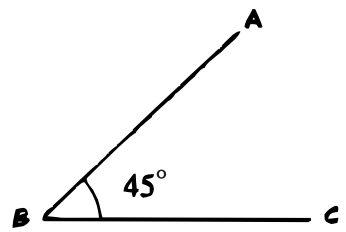
What is the size of the smaller angle between the minute and hour hands?



angle _____

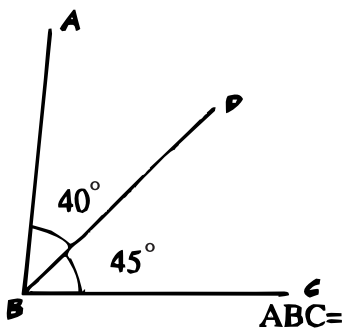
Write down the value of angle ABC.

1



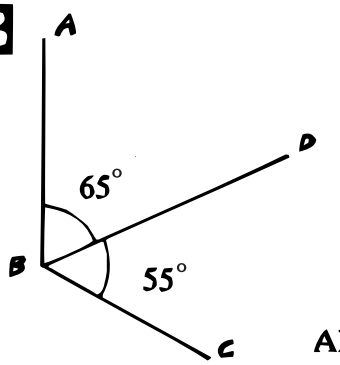
ABC= _____

2



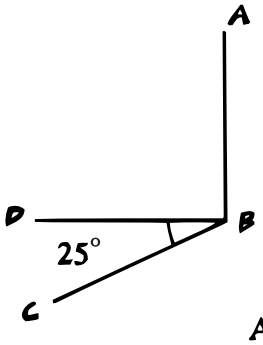
ABC= _____

3



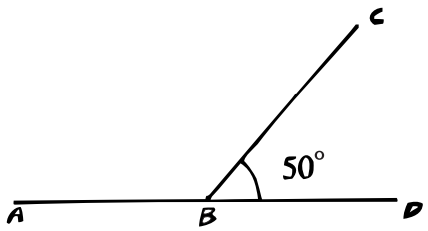
ABC= _____

4



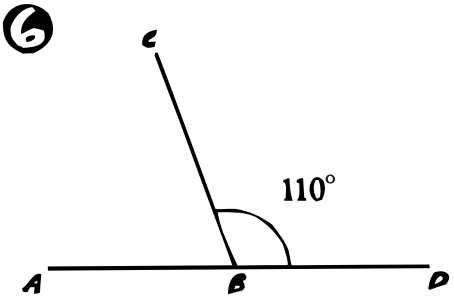
ABC= _____

5



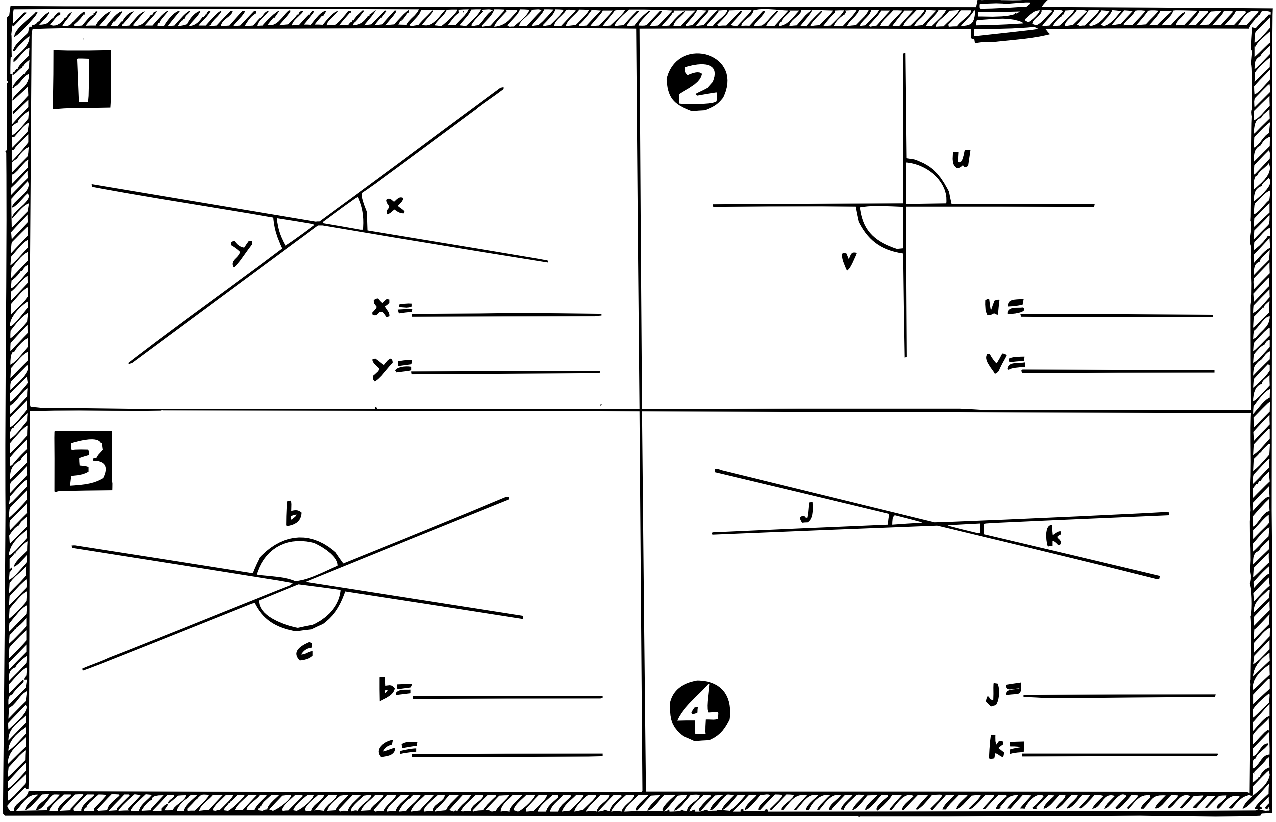
ABC= _____

6



ABC= _____

Measure the marked angles with a protractor.



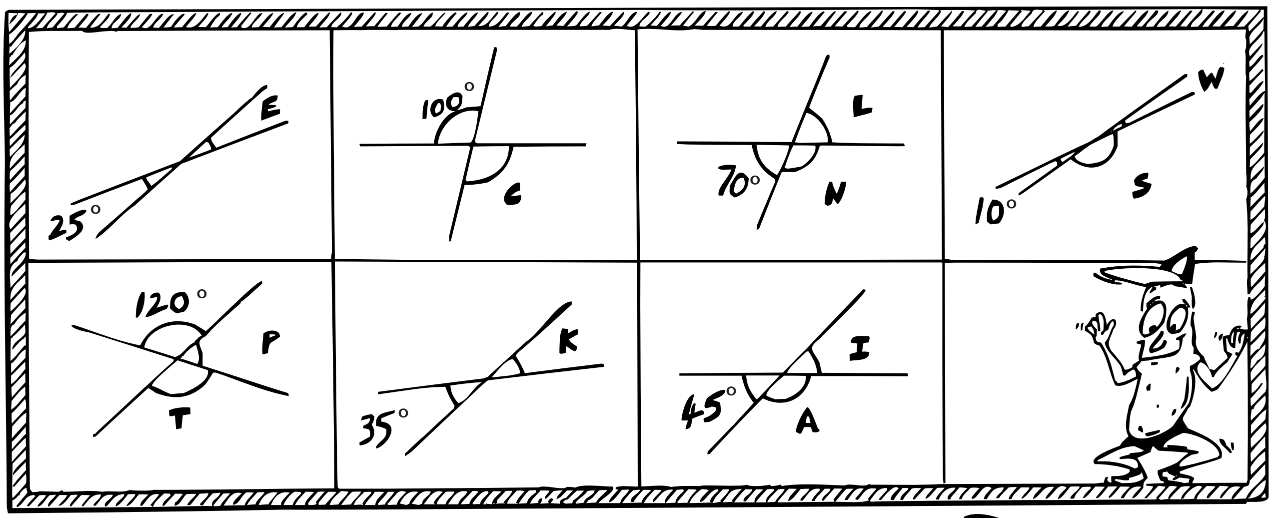
What do all the pairs have in common?

____

These angles are called Vertically Opposite.

Vertically Opposite angles are the same.

Find the missing angles to crack the code.



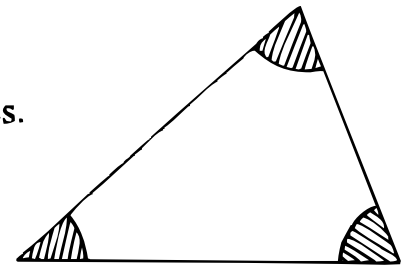
– WHY DID THE CUCUMBER NEED A LAWYER?

" __ __   __ __ __   __ __   __   __ __ __ __ __ __ !"

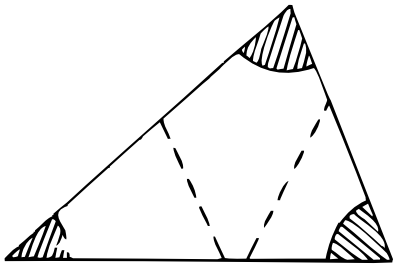
45 120   10 135 170   45 110   135   60 45 100 35 70 25

- HOW MANY DEGREES IN A STRAIGHT LINE ?

1 Draw a triangle on a piece of cardboard and mark all the vertices.

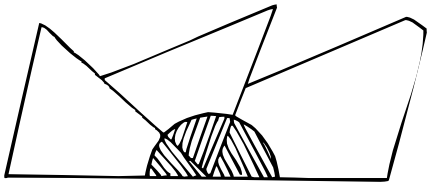


2 Cut your triangle into 3 parts.



3 Now put the three marked angles together.

You should get a straight line.



- How many degrees do the angles inside a triangle add up to? _____

_____

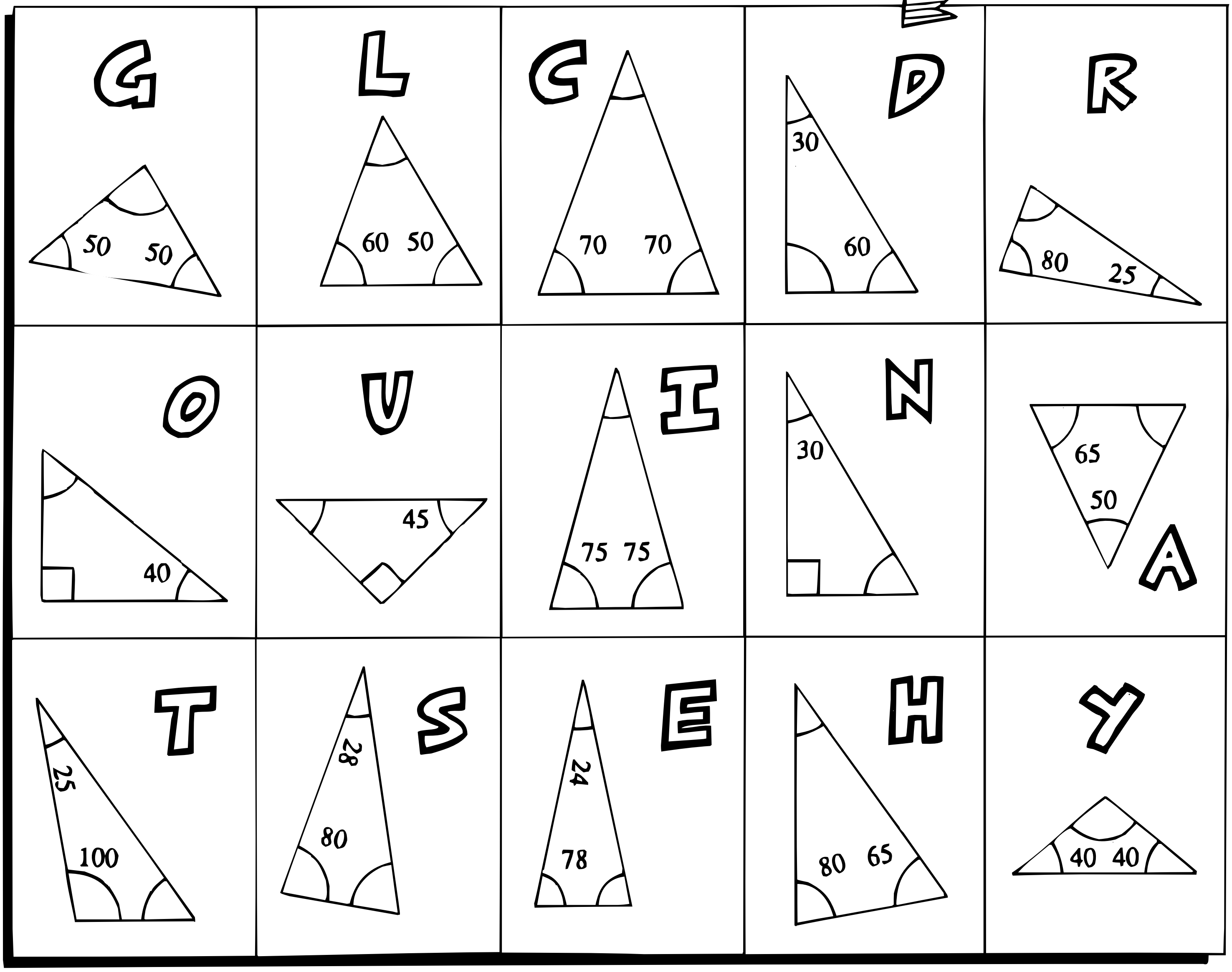
- How many degrees do the angles in a straight line add up to? _____

_____

You should have found that angles on a straight line equal 180°

–WHAT DO THE INSIDE ANGLES OF A TRIANGLE ADD UP TO ? ____________

Find the missing angles to answer the codes.



What do misers do when it is cold ?

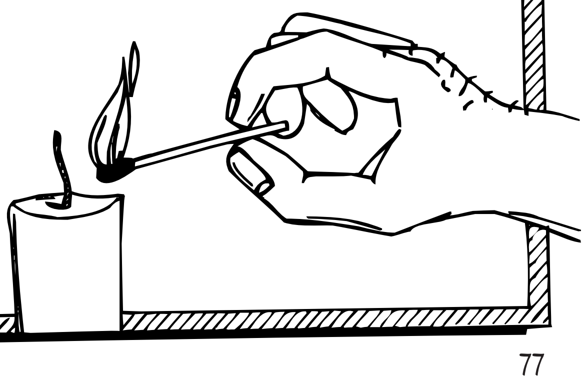
_ _ _ _   _ _ _   _ _ _ _ _ _   _   _ _ _ _ _ _

55 35 78 100   72 30 55   65 75 50 45 60 90   65   40 65 60 90 70 78

What do misers do when it is very cold ?

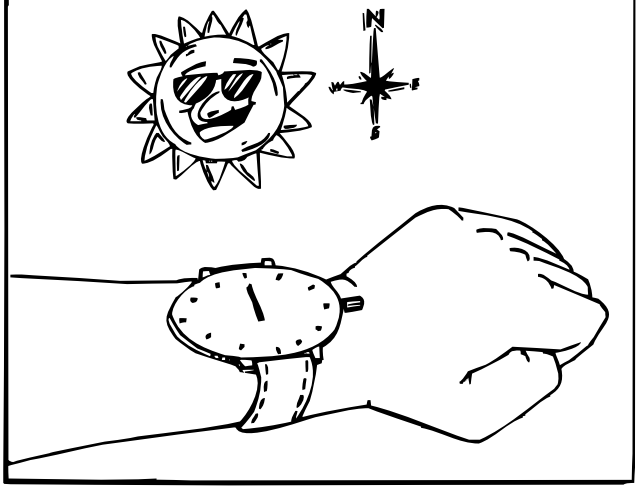
_ _ _ _   _ _ _ _ _   _ _

55 35 78 100   70 30 80 35 55   30 55

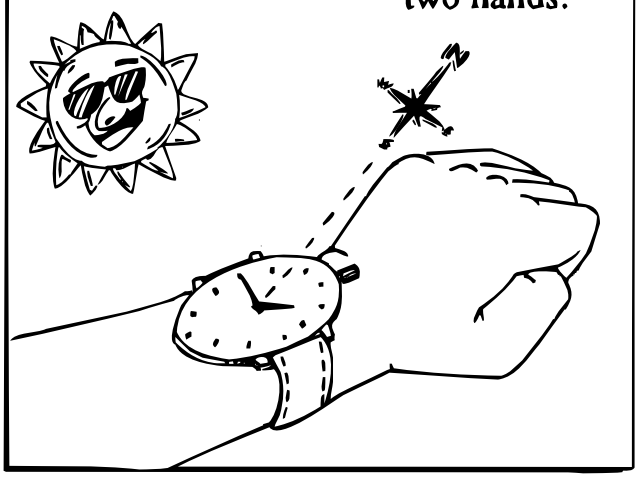


ANGLES AND DIRECTIONS

If you face the sun at 12o'clock you are facing north.

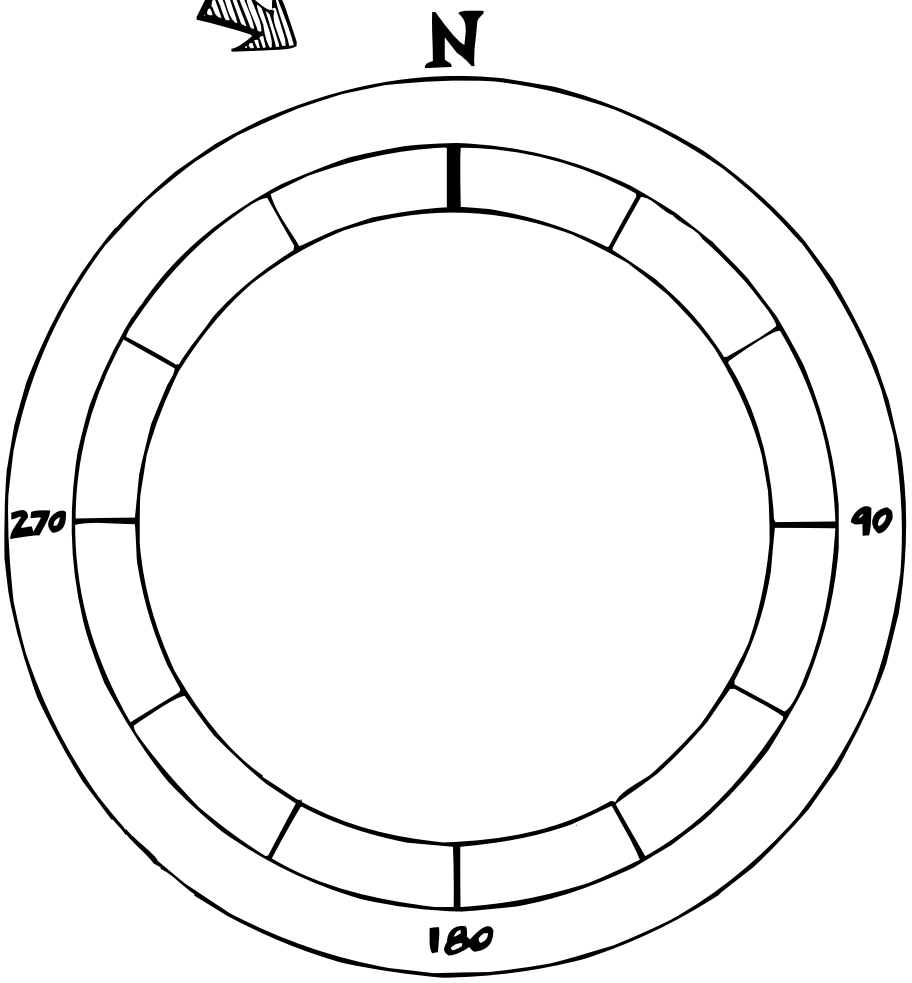


At other times, point the 12 at the sun, and north will be half way between the two hands.



-NOW GO OUTSIDE AND FIND NORTH!

Complete this compass diagram before you go!

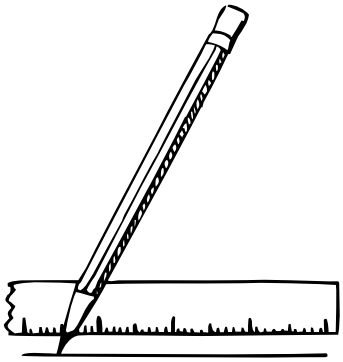


How do you draw a triangle when you are only given the measurements of each side ?

-EXAMPLE : DRAW A TRIANGLE WITH SIDES 4cm, 5cm, AND 3cm.

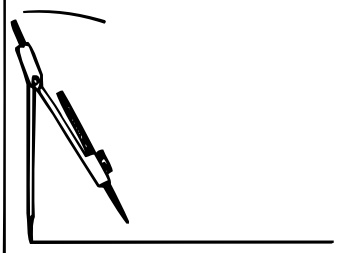
STEP 1

Draw a line using the first measurement.



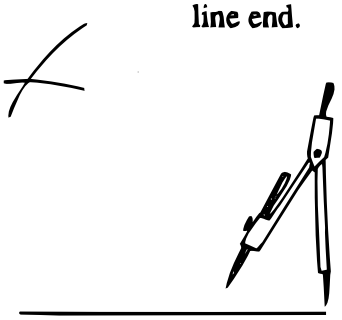
STEP 2

Set your compass to the size of the second side and draw an arc from one of the line ends.



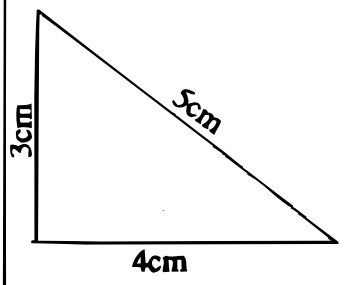
STEP 3

Repeat with your compass using the last measurement and other line end.



STEP 4

Now join the points.

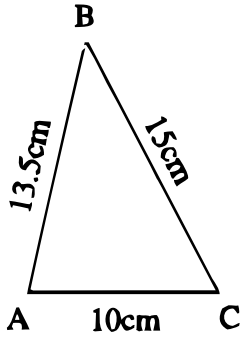


Draw 5 triangles with these side lengths:

1. 3cm, 4cm, 5cm
2. 6cm, 2cm, 6cm
3. 5cm, 5cm, 5cm,
4. 9cm, 4cm, 6cm
5. 8cm, 3cm, 8cm

SCALE DRAWINGS!

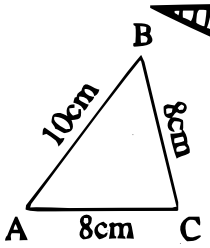
Below is a **Scale Drawing**. This is a smaller version of the real thing. Using the scale drawing, draw what the real triangle would look like. When finished measure the angles and fill in the table.

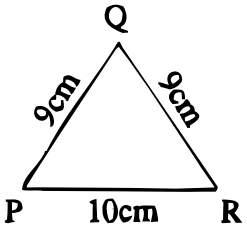


Angle	Measure
A	
B	
C	
A + B + C	180°

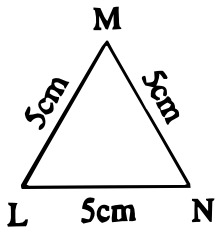
A

Using these scale drawings, draw the triangles and measure the angles.





A



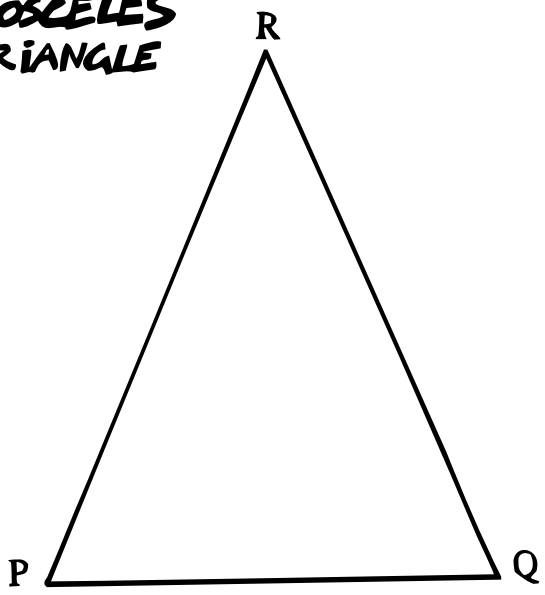
L

P

Angle	
A	
B	
C	
A + B + C	= 180°
P	
Q	
R	
P + Q + R	= 180°
L	
M	
N	
L + M + N	= 180°

TYPES OF TRIANGLES 1

ISOSCELES TRIANGLE



- MEASURE THE SIDES!

PQ _____ cm

PR _____ cm

QR _____ cm

- MEASURE THE ANGLES!

P _____

Q _____

R _____

Give an explanation of an isoceles triangle.

_____

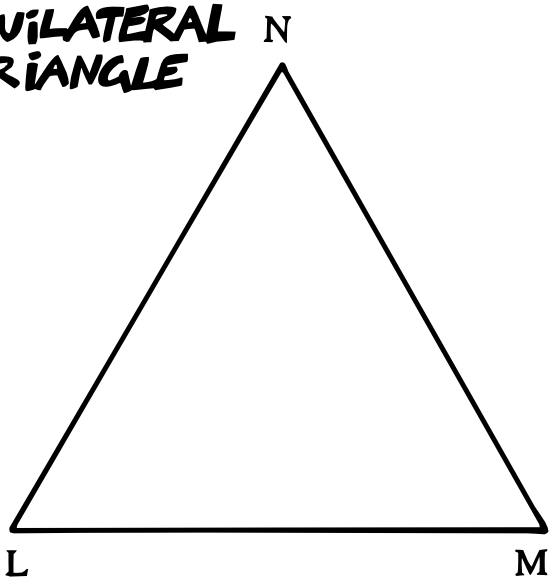
_____

_____

Tonight's homework: Learn how to spell ISOSCELES.

TYPES OF TRIANGLES 2

EQUILATERAL TRIANGLE



- MEASURE THE SIDES!

LM _____

LN _____

MN _____

- MEASURE THE ANGLES!

L _____

M _____

N _____

Give an explanation of an equilateral triangle.

_____

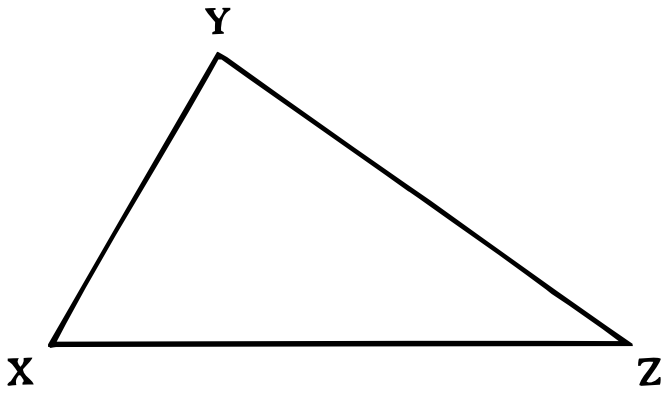
_____

_____

Tonight's homework. Learn how to spell EQUILATERAL.

TYPES OF TRIANGLES 3

SCALENE TRIANGLE



- MEASURE THE SIDES!

XY _____

YZ _____

XZ _____

- MEASURE THE ANGLES!

X _____

Y _____

Z _____

Give an explanation of a SCALENE triangle.

_____

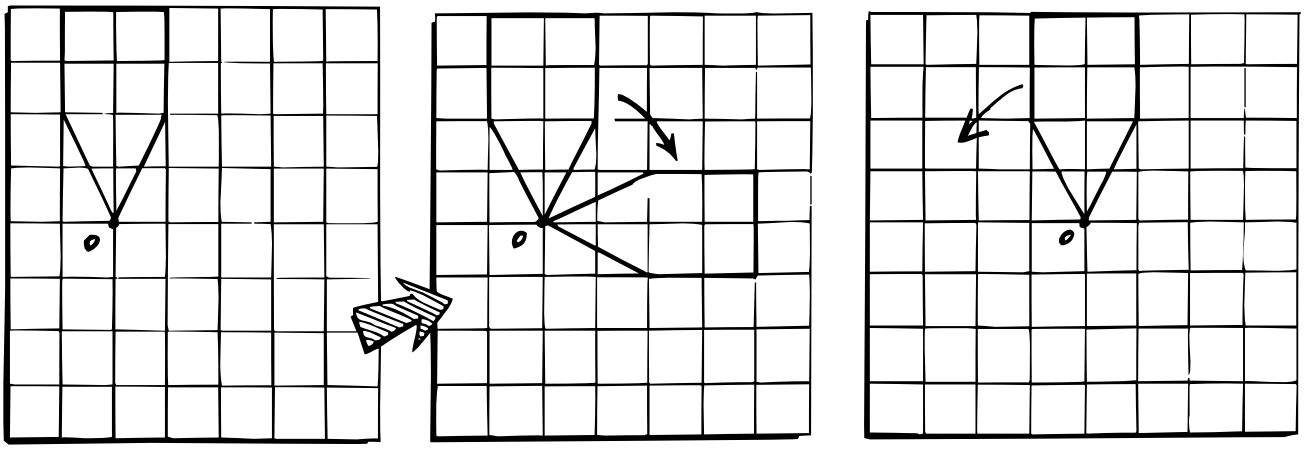
_____

_____

Tonight's homework. Learn how to spell SCALENE.

MAKING PATTERNS BY ROTATING

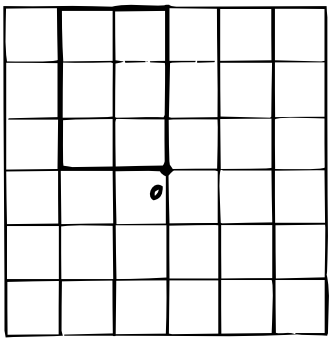
You can rotate clockwise or anticlockwise



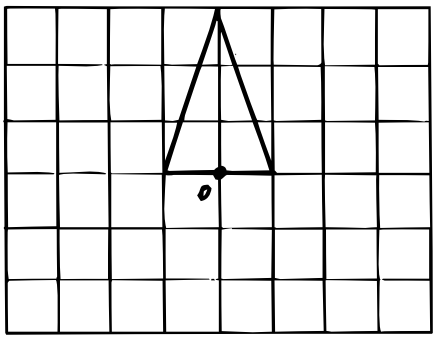
Rotate the shape 90° clockwise around point O

Now you rotate the figure 90° around O

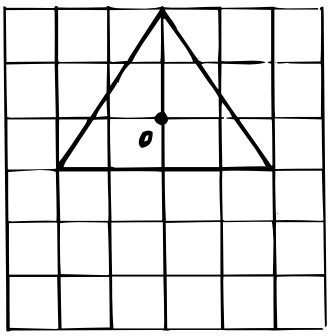
Try these rotations. To help you find the new position, use tracing paper to trace the shape first and then rotate it.



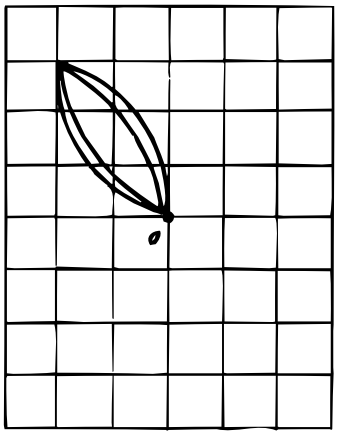
Rotate 180° around O



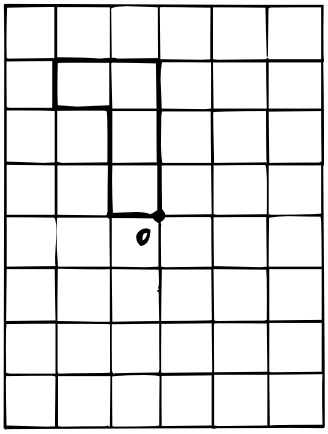
Rotate 90° anticlockwise



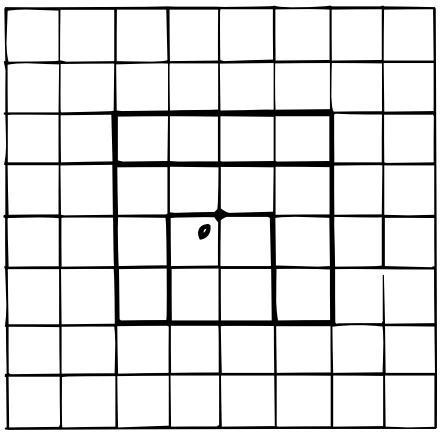
Rotate 90° anticlockwise



Rotate 180° around O



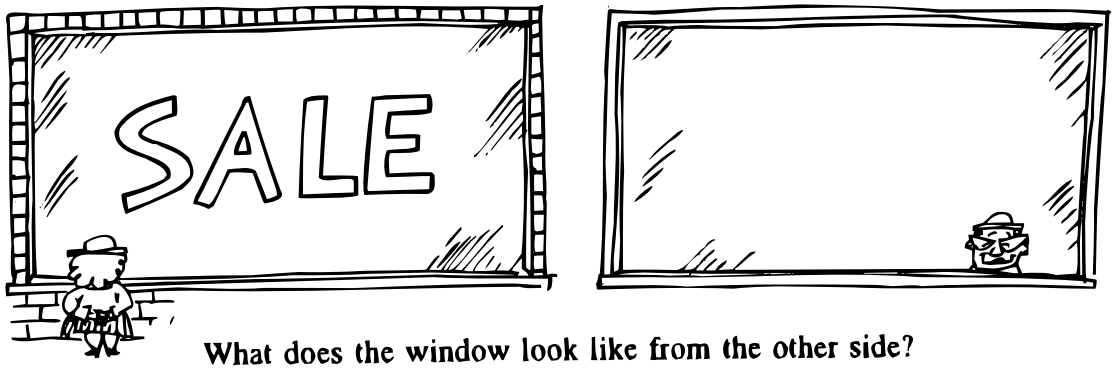
Rotate 270° anticlockwise around O



Rotate 45° clockwise

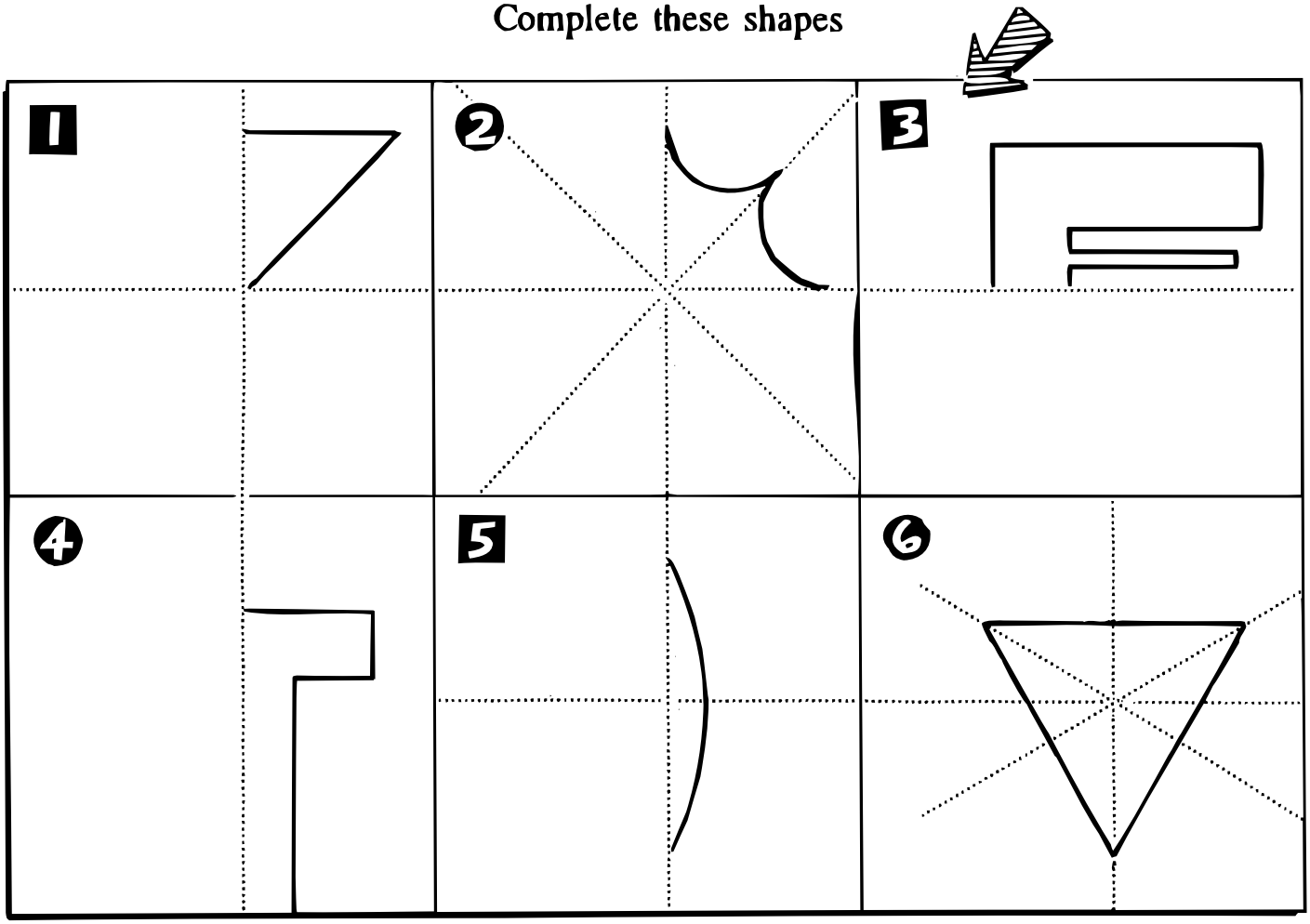
REFLECTION

- YOU'LL NEED A MIRROR FOR THIS PAGE!



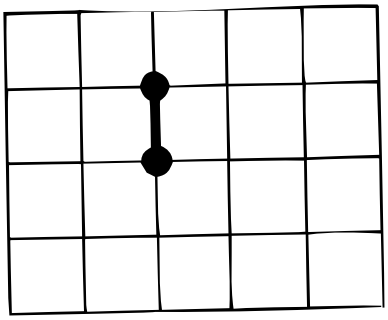
What does the window look like from the other side?

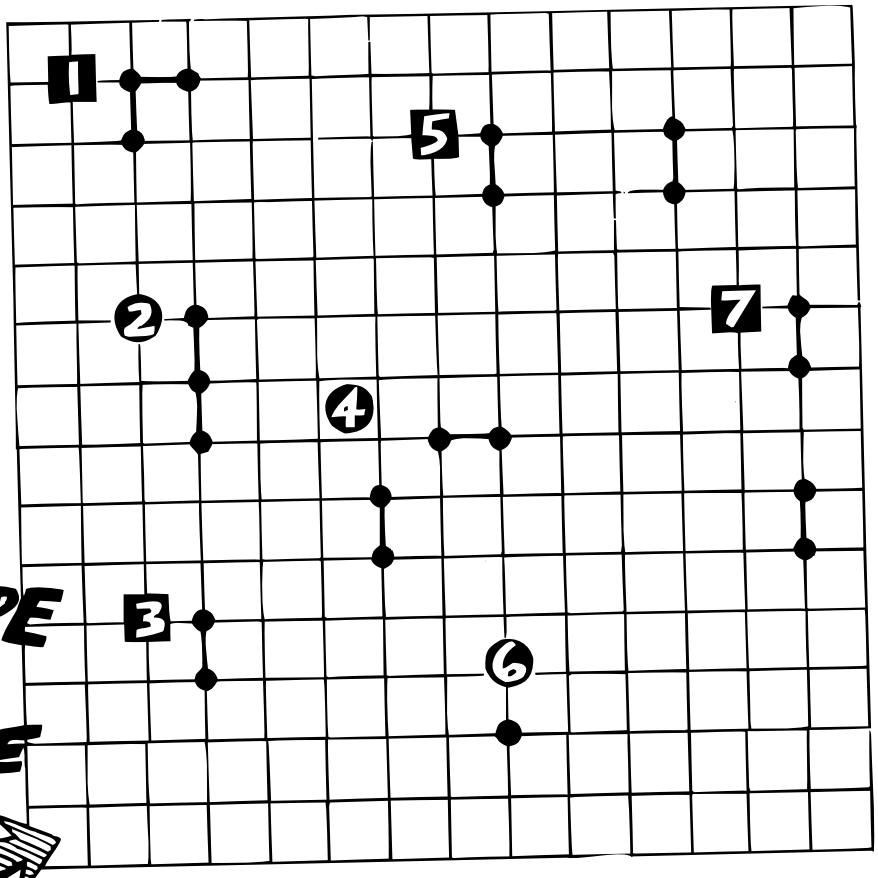
Complete these shapes



Complete the reflection

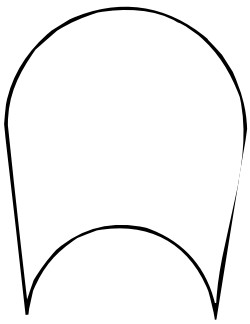
THE JELLY WOBBLED WHEN IT SAW THE MILKSHAKE!

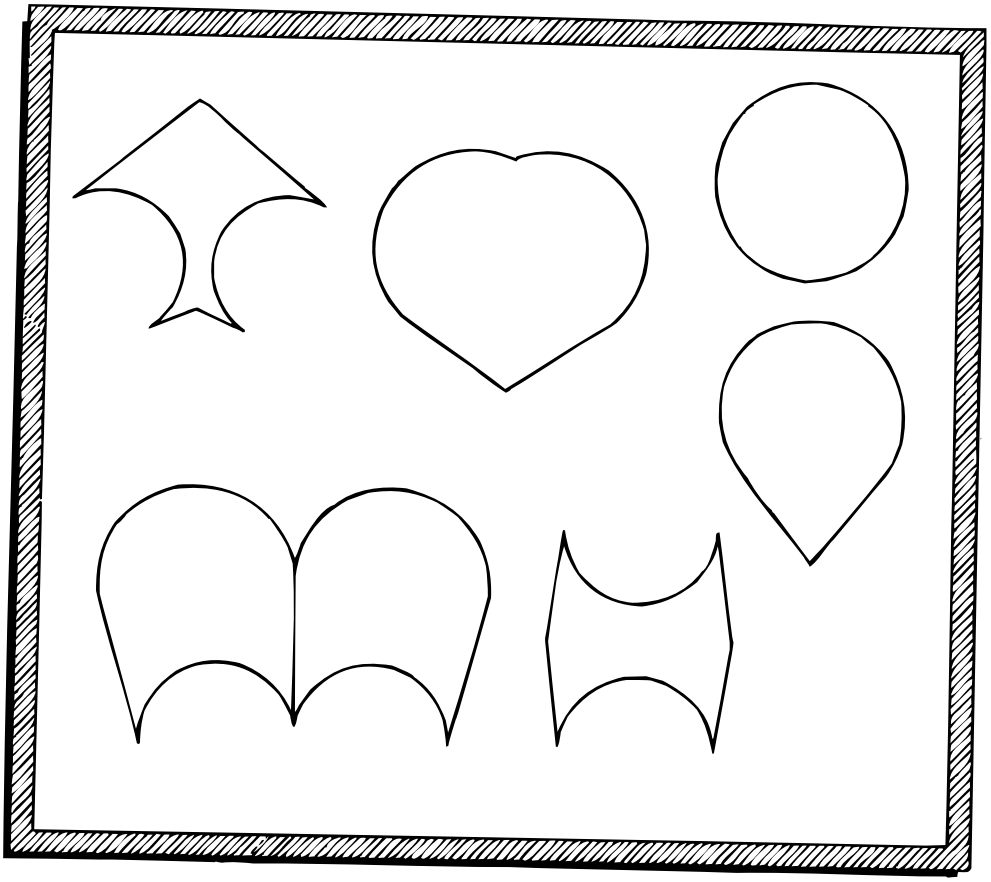




-USE A MIRROR ON THE SHAPE ABOVE, TO MAKE THESE SHAPES.

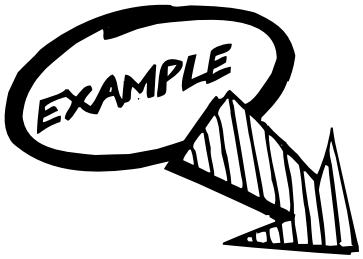
Now use a mirror on this ....to make the shapes below.

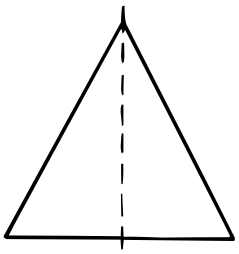




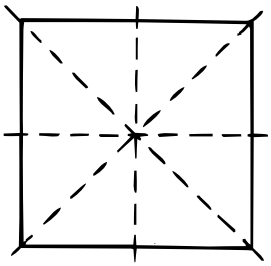
SYMMETRY

When a figure can reflect onto itself, the mirror line is called a line of symmetry

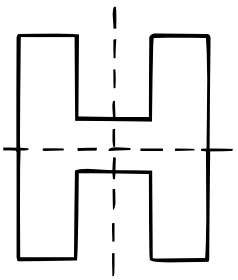




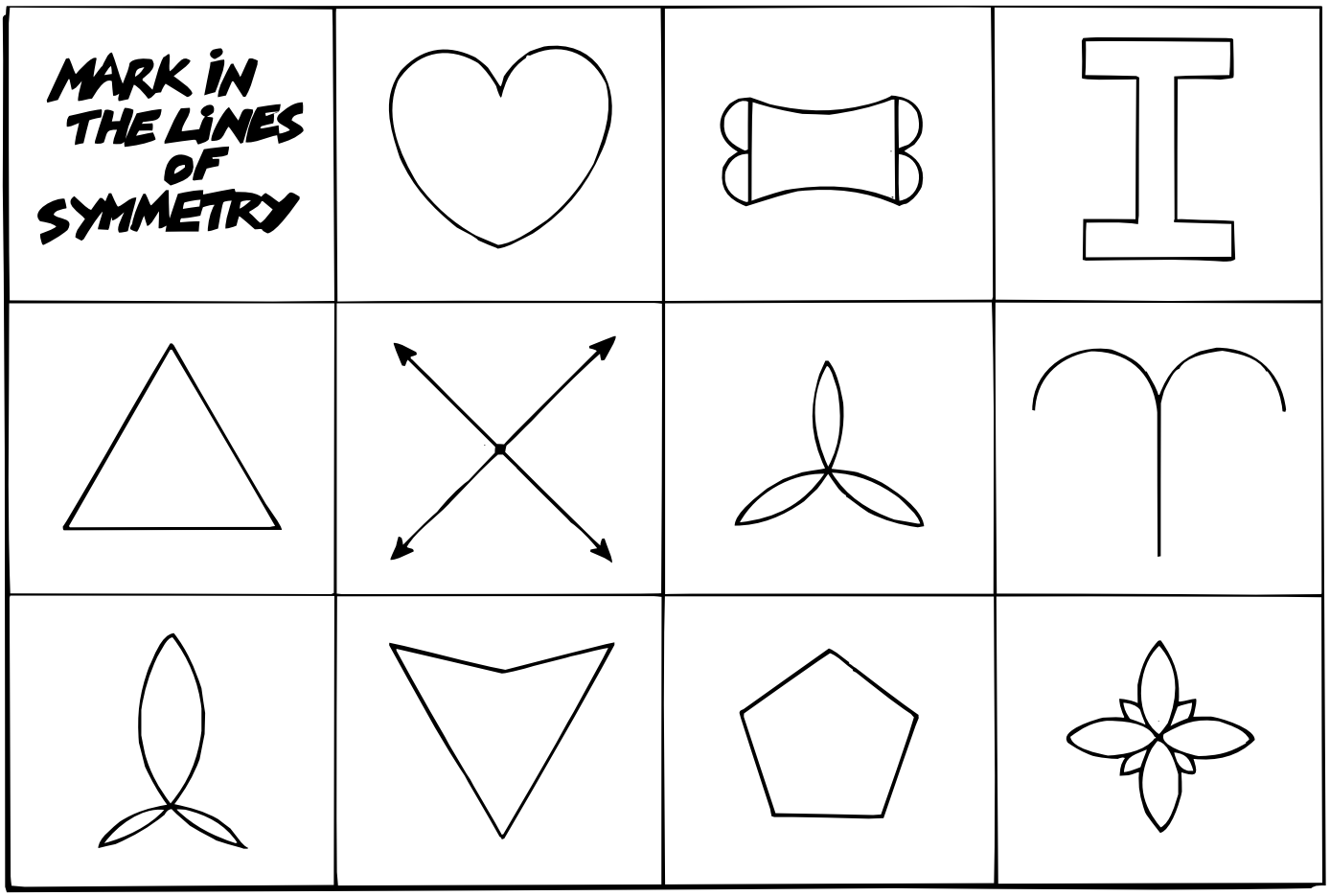
1 line of symmetry



4 lines of symmetry

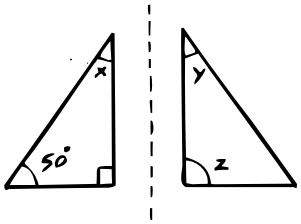


2 lines of symmetry



Name the shapes and draw any axes of symmetry

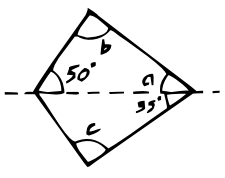
Now calculate the missing angles



x = _____

y = _____

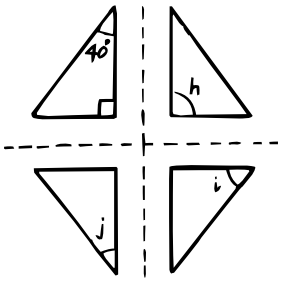
z = _____



a = _____

b = _____

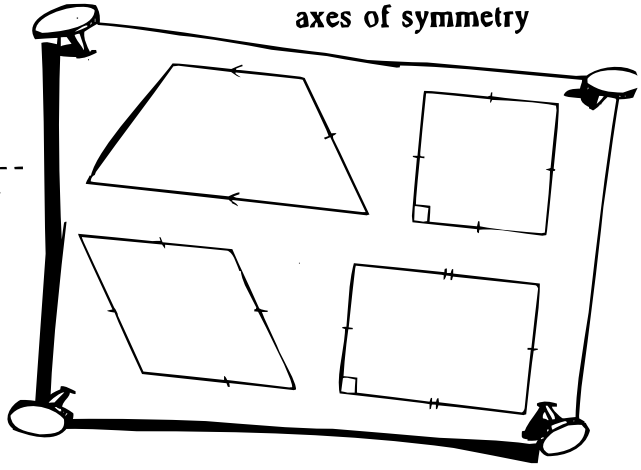
c = _____



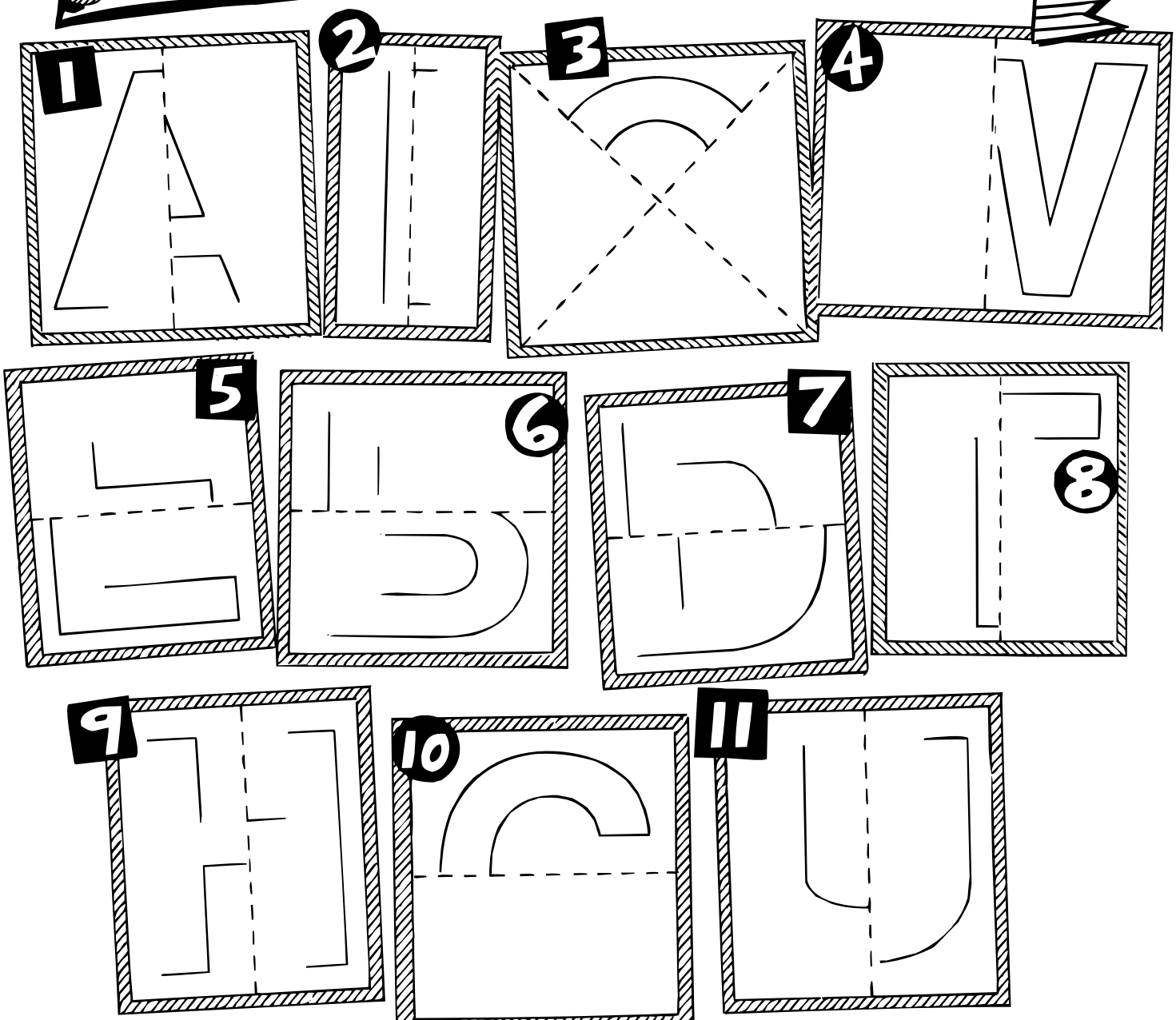
h = _____

i = _____

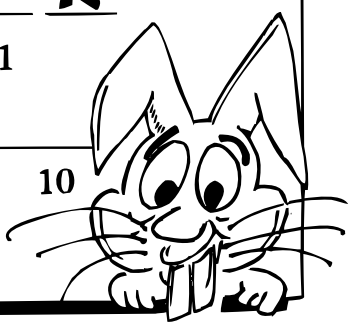
j = _____



Complete the figures around each line of symmetry to answer the code

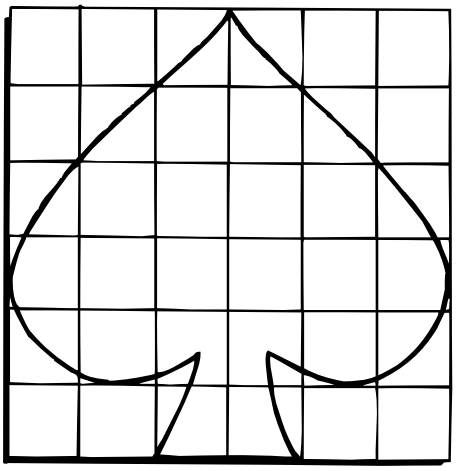


				L				R										S	
6		1				7				1		6		6		2		8	
S						L												R	
		9		3		11				7				4		5		1	
				R								N							
9		1				5				8		3				2		10	



ENLARGING!

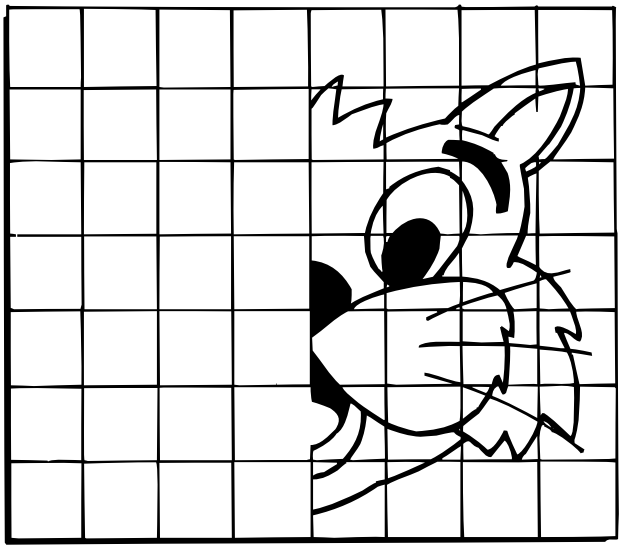
Using the grids ENLARGE the top figure and REDUCE the bottom



1 ENLARGE

2 REDUCE

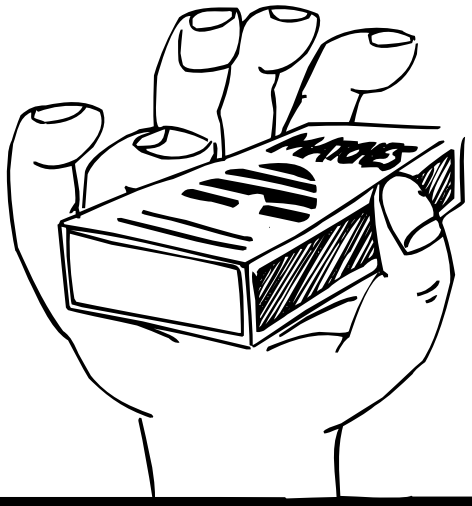
COMPLETE THE REFLECTION USING THE GRID!



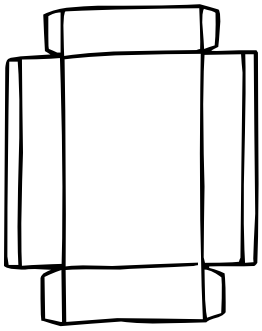
Now ENLARGE using this grid

ENLARGING!

1. Get an empty match box.

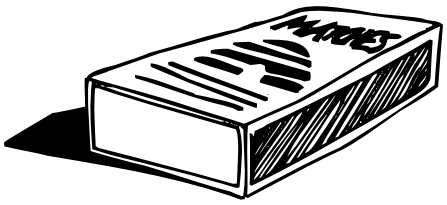


2. Pull it apart and see how it was made.



3. On a piece of cardboard enlarge the matchbox pattern 2x, 3x, 5x or even 10x!

4. Fold up your matchbox and paint it.



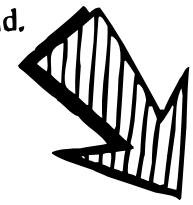
5. Get the school principal to come along and choose the best one.

6. For a real challenge you could even try the same thing with an empty milk carton.

- GET YOUR FAVOURITE CARTOON CHARACTER AND STICK IT HERE.

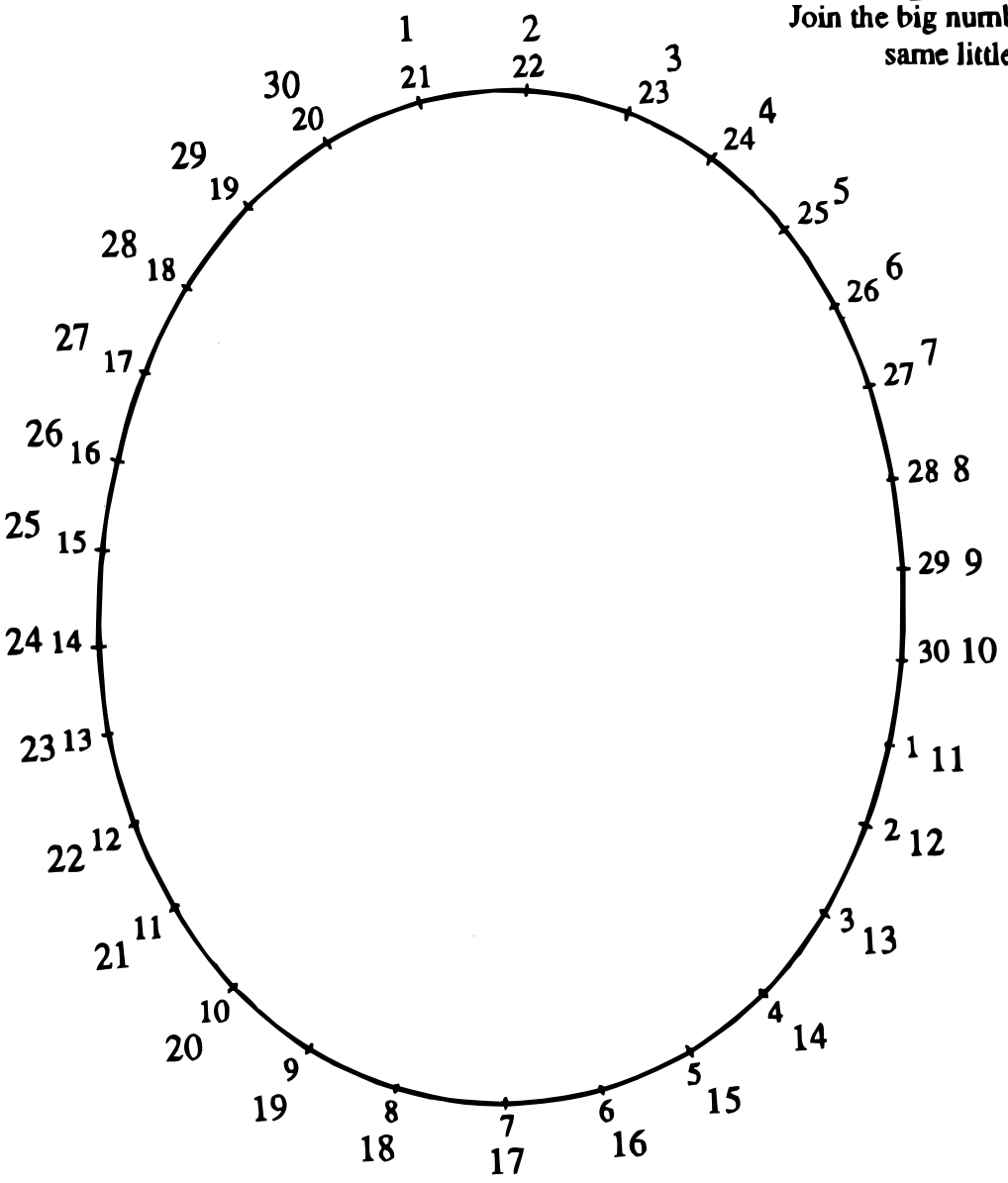
Draw the grid over it.

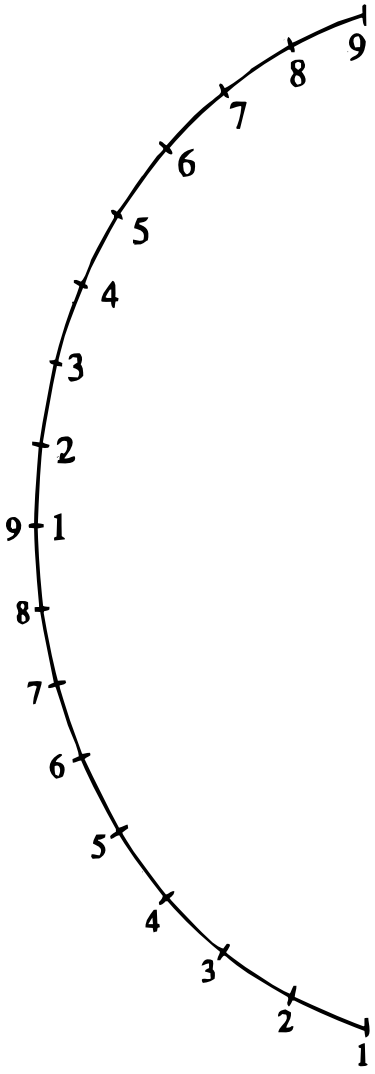
Now ENLARGE it using this grid.

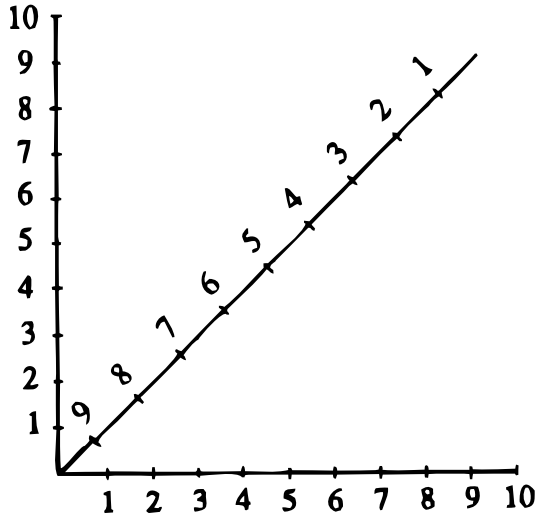


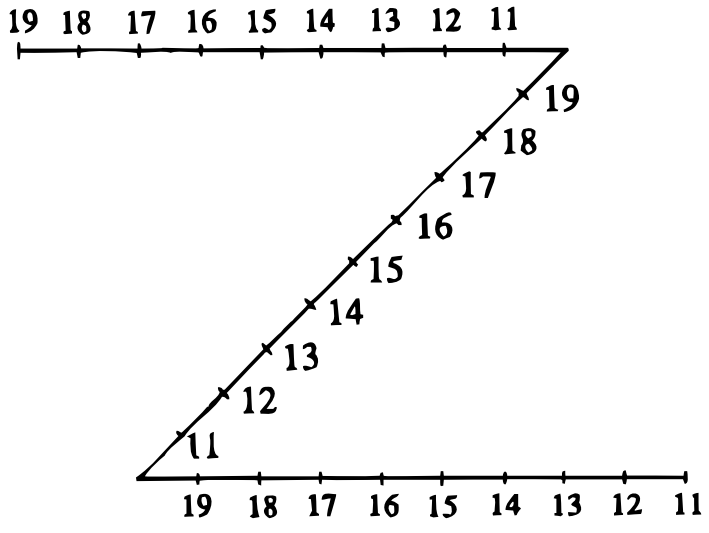
- FUN WITH LINES 1

Join the big numbers to the same little numbers.





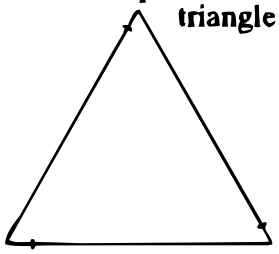




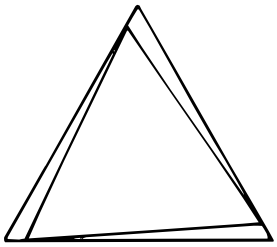
- FUN WITH LINES 2

- TRIANGLE CURVES!

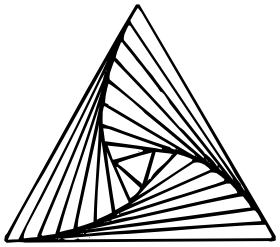
STEP 1 Measure 1cm from each apex of the triangle.



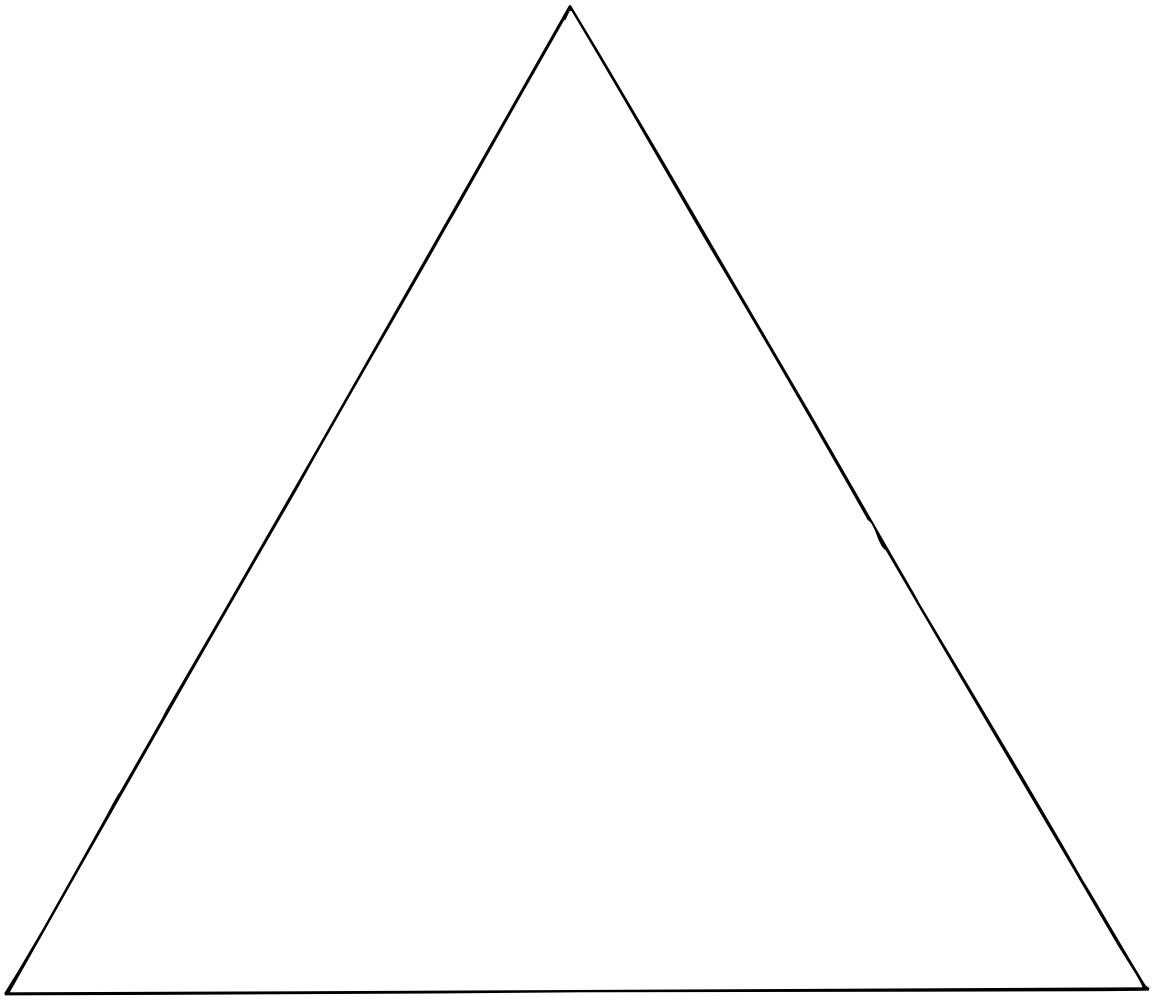
STEP 2 Draw the new triangle



STEP 3 Repeat for the next triangle

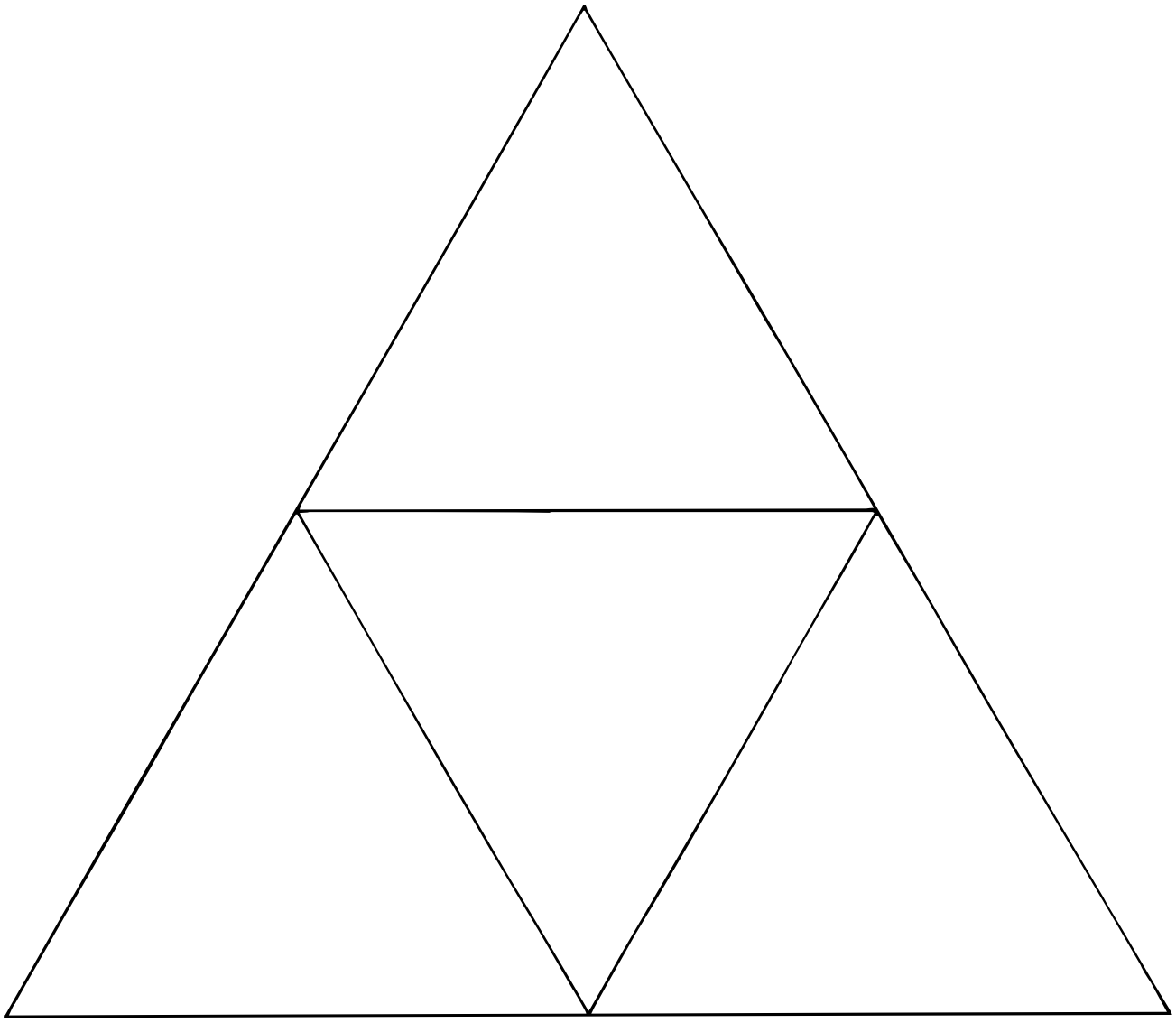


Keep on doing this until you have this pattern

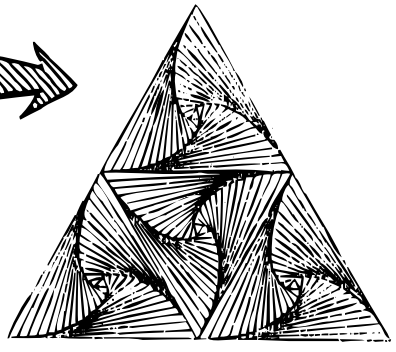


- FUN WITH LINES 3

- FOR EXPERTS ONLY!

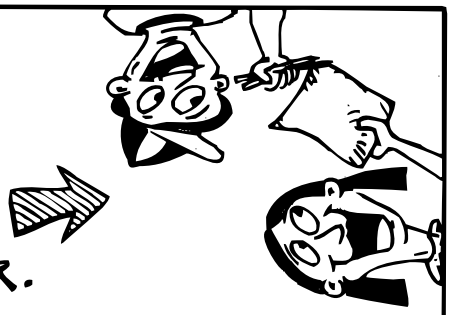


Keep on doing this until you have this pattern

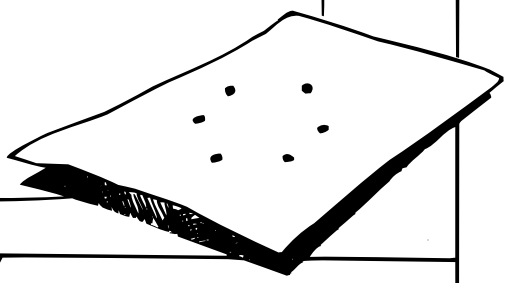


SIM!

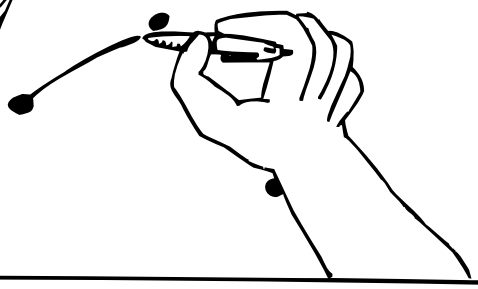
1 -YOU NEED 2 PLAYERS EACH WITH A DIFFERENT COLOURED PEN & A PIECE OF PAPER.



2 MARK 6 DOTS ON A PIECE OF PAPER



3 EACH PLAYER JOINS TWO OF THE DOTS WITH THEIR PEN.



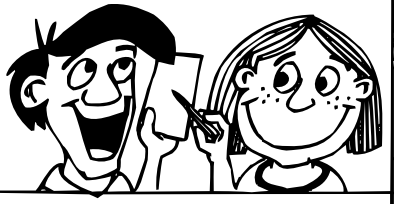
4 The first player to form a triangle of their own colour loses!

5 Keep score of who you play

OPPONENTS						
WINNER						

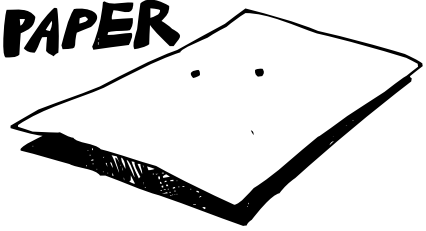
- SPROUTS -

- YOU NEED A PENCIL AND PAPER AND 2 PLAYERS



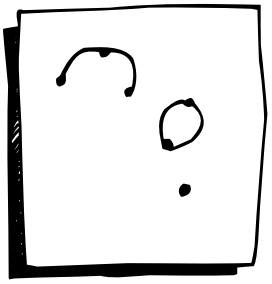
HOW TO PLAY

1 MARK 2 DOTS ON A PIECE OF PAPER



2 THE FIRST PLAYER MOVES BY EITHER :
- DRAWING A LINE FROM ONE POINT TO THE OTHER
- OR DRAWING A LINE TO THE SAME POINT.

3 WITH EACH MOVE A NEW POINT IS MADE



4 THE NEXT PLAYER NOW MAKES THEIR MOVE!

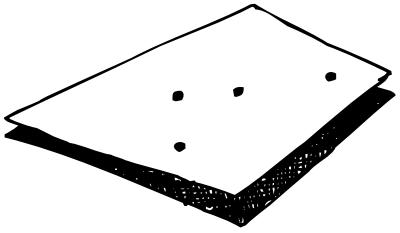
5 THERE ARE ONLY 2 RULES

1. EACH POINT CAN ONLY HAVE 3 LINES GOING TO IT.
2. LINES MAY NOT CROSS!

6 CONTINUE UNTIL ONE PLAYER CANNOT MOVE . . .

. . . THAT PLAYER LOSES !

VARIATIONS
- START WITH 3 OR MORE DOTS



- Keep a record of who you play.

Opponents	Winner

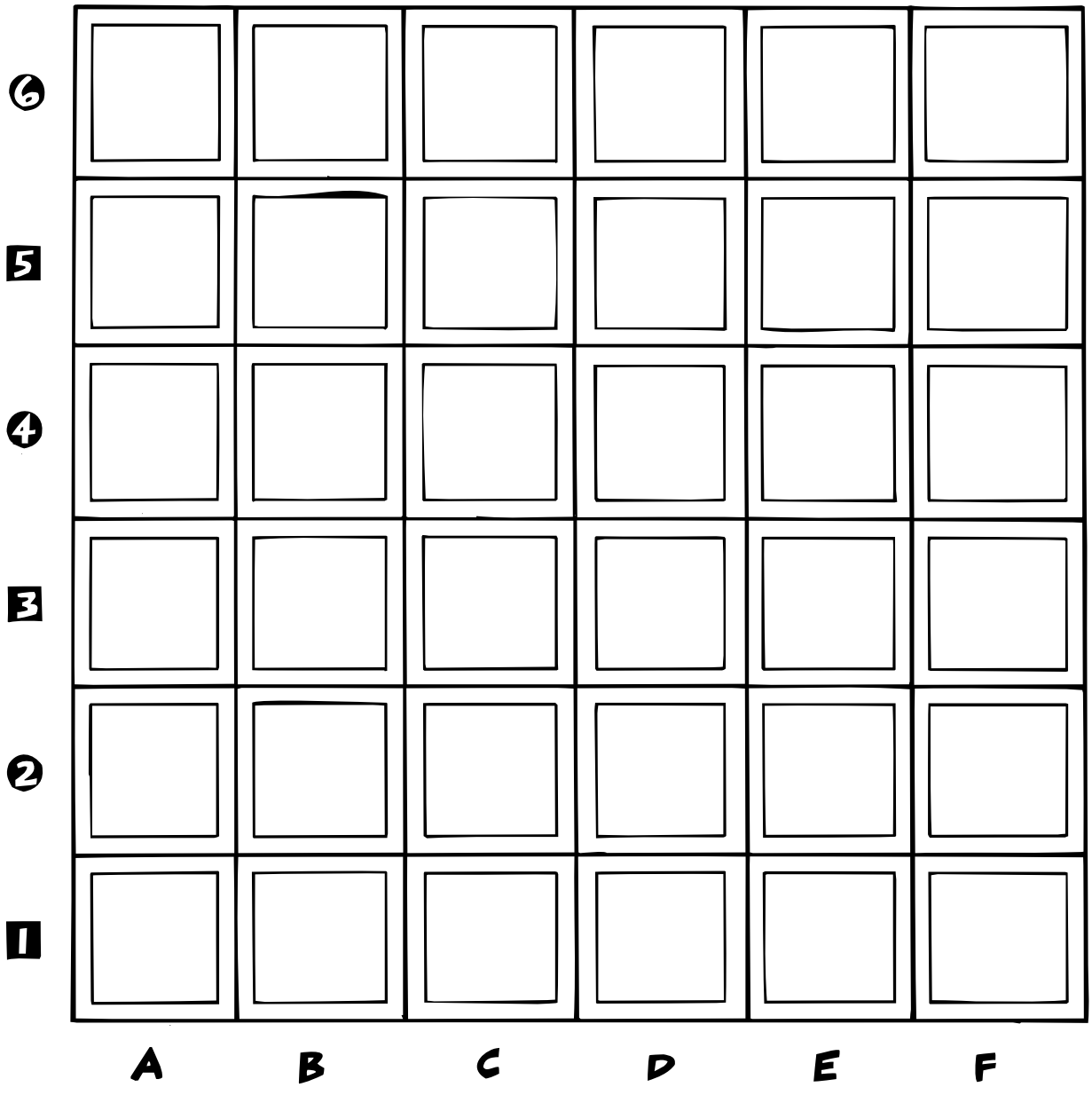
-CONNECT 4 AND SCORE!

-YOU NEED, 2 PLAYERS, EACH WITH 18 COUNTERS

How to play

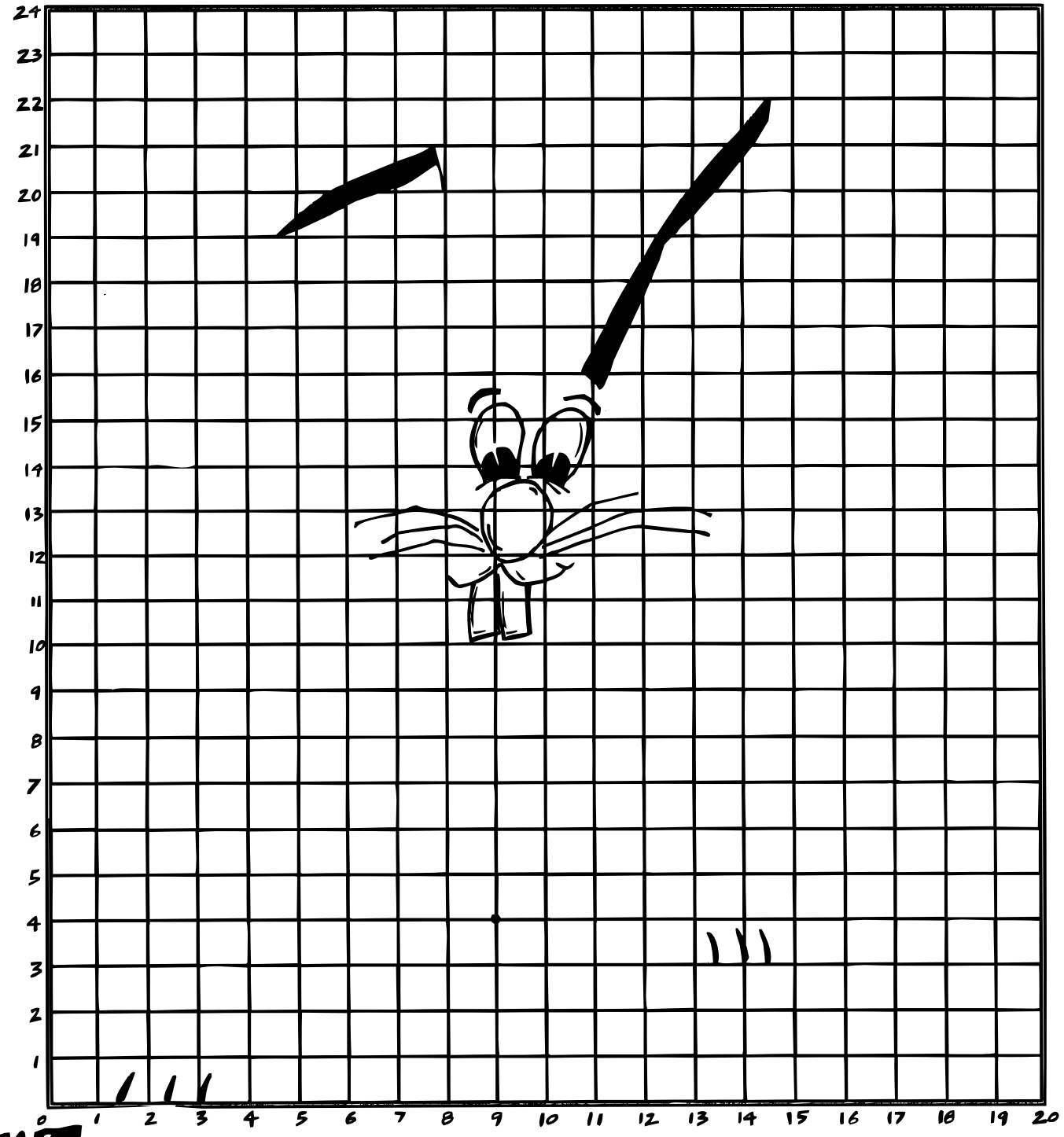
Place your counters in turn in any column A – F in any available space.

The winner is the first who can get 4 of their counters in a row either horizontally, vertically or diagonally.



-WHERE IS THE RABBIT?

-JOIN THE CO-ORDINATES TO FIND HIM!



START

9,4 8,3 8,2 9,1 10,2 12,3 15,3 14,4 12,4 11,4 10,3 11,5 12,6 13,8

12,9 10,7 11,8 9,10 8,9 11,9 12,10 13,12 14,14 13,15 12,15 11,14 11,15 12,16

16,21 16,23 13,22 11,17 9,17 9,21 8,22 5,20 4,19 4,18 6,19 8,20 8,14 7,15 6,15

5,14 5,13 6,12 7,10 7,9 8,9 6,7 5,5 6,2 7,2 8,3 7,2 6,2 4,0

1,0 1,1 2,2 3,2 4,1 3,3 3,5 4,6 5,5

BATTLE SHIPS

How to play

You need 2 players and a pen each for this game.

1. Draw onto your grid a Battleship, a Cruiser, and a Submarine. They can be placed horizontally or vertically. Don't let the other player see where you are placing them!

2. Decide on who will go first. Now call out a grid reference. For example F5. Record what you have called on the second grid. If no Battleships are within this square then your partner calls MISS and it is their turn. If a Battle ship is within the square called then your partner calls HIT and you receive another turn.

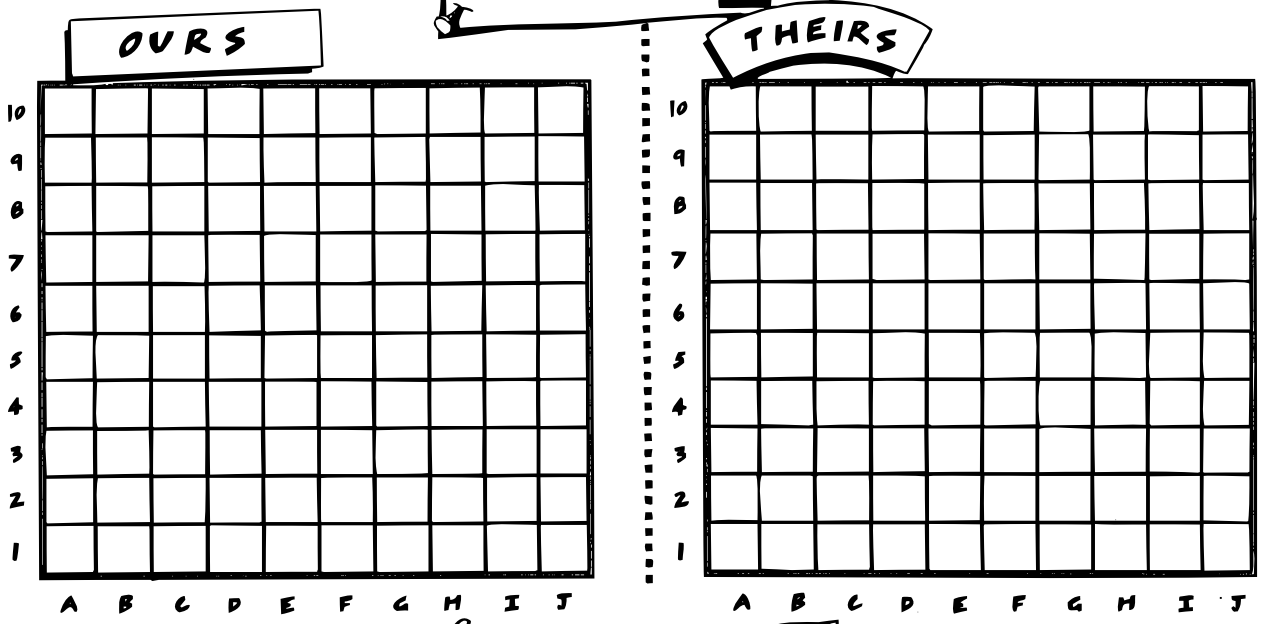
3. The object of the game is to sink all of your partners Battleships

Battleship

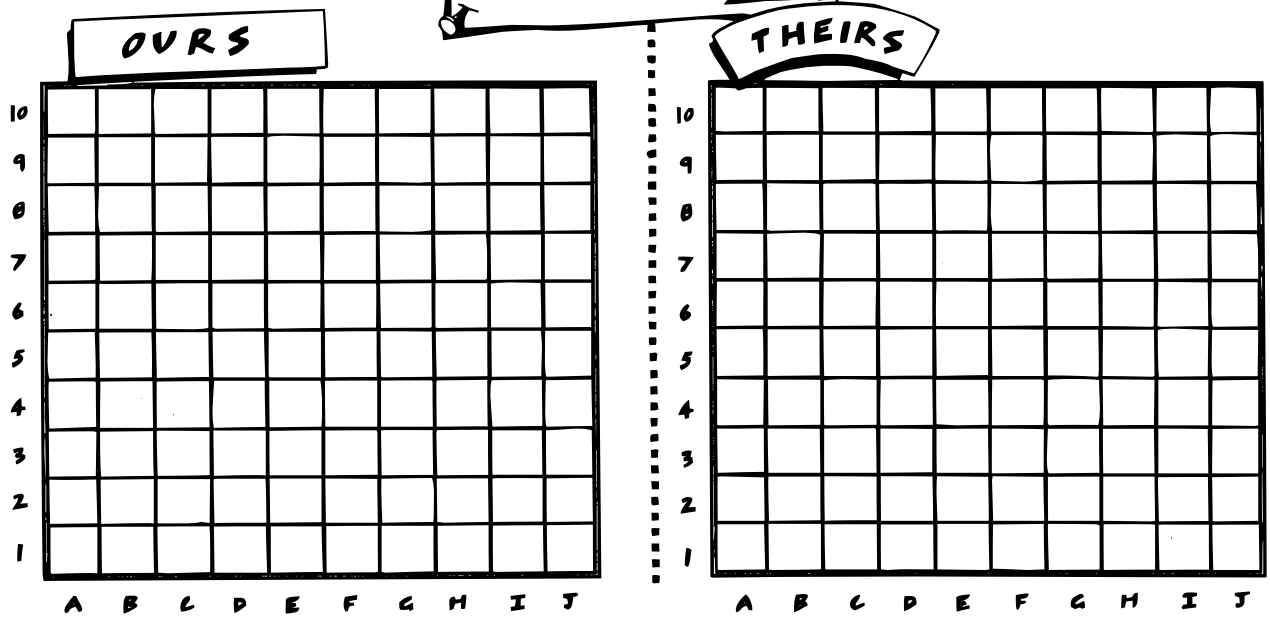
Cruiser

Submarine

-GAME 1



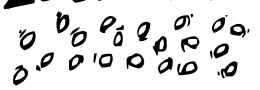
-GAME 2

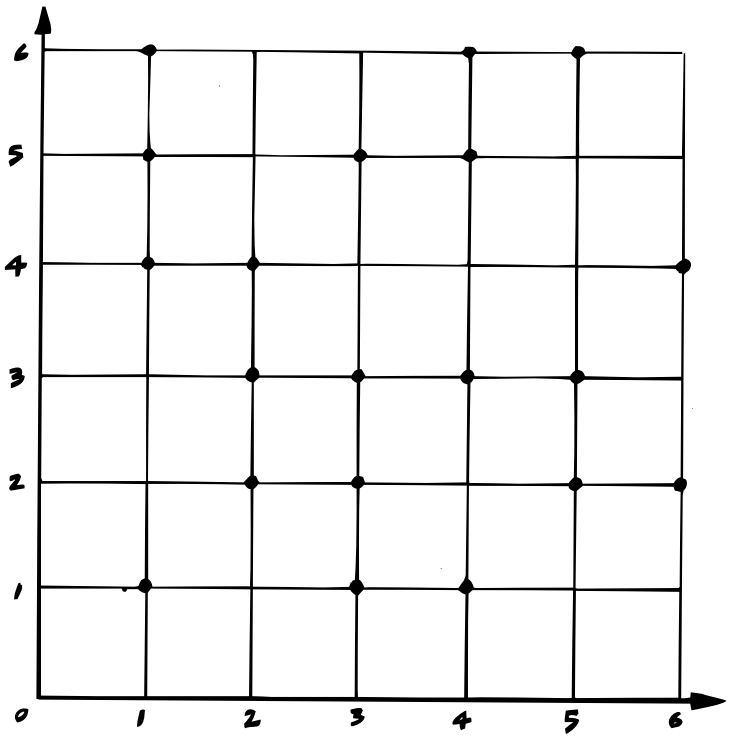


-DICE CO-ORDINATES

1

-YOU NEED 2 PLAYERS, 2 DICE, 20 COUNTERS





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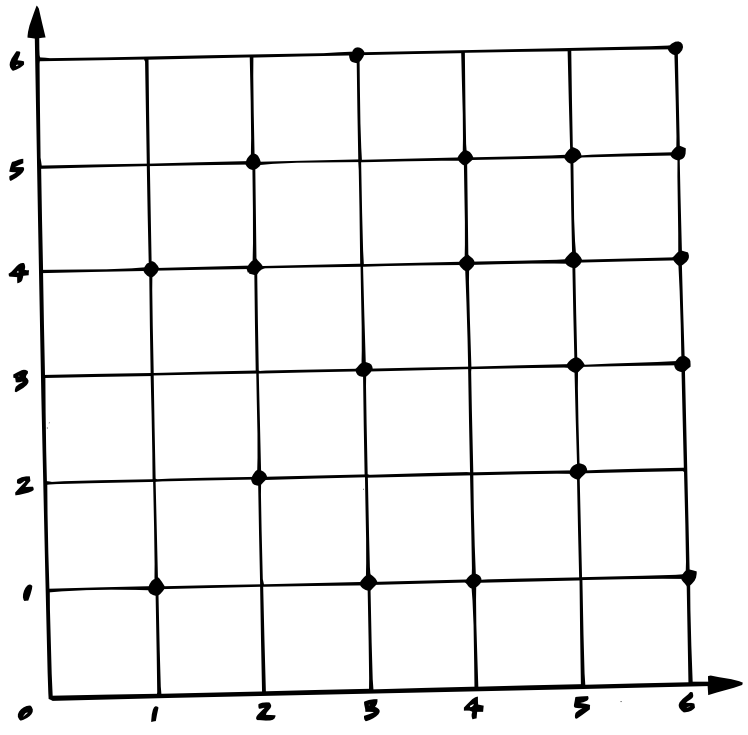


Keep score of who you play

HOW TO PLAY

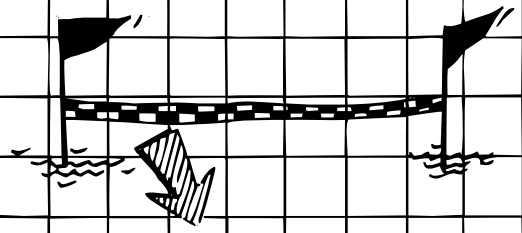
1 CHOOSE A GRID. EACH HAS 20 POINTS MARKED.

2 TAKING TURNS, TOSS BOTH DICE. IF THE DICE FORM A CO-ORDINATE WITH A SPOT, THEN PUT A COUNTER ON THE SPOT.

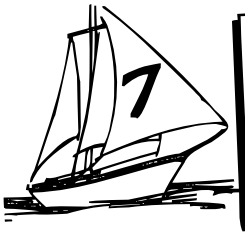
3 THE FIRST PLAYER WITH 10 SPOTS COVERED... ...WINS!

OPPONENT	WINNER

-VECTOR SAILING



- YOU NEED: 2 DICE  , COUNTERS 



STEP 1

- START ANYWHERE ON THE START/FINISH LINE.
- TOSS TWO DICE.

STEP 2

- ONE DICE GIVES THE NORTH/SOUTH DIRECTION. THE OTHER GIVES THE EAST/WEST DIRECTION.

STEP 3

THE FIRST PLAYER AROUND N.Z. ANTICLOCKWISE WINS. YOU CANNOT GO ONTO LAND OR OFF THE GRID.

ALGEBRA

Write down the next 3 numbers.

2 , 4 , 6 , 8 , ____ , ____ , ____

1 , 3 , 5 , 7 , ____ , ____ , ____

4 , 8 , 12 , 16 , ____ , ____ , ____

1 , 7 , 13 , 19 , ____ , ____ , ____

10 , 8 , 6 , 4 , ____ , ____ , ____

- EACH NUMBER IN A PATTERN IS CALLED A TERM!

Find the missing terms.

6 , 10 , ____ , 18 , 22	1 , ____ , 7 , 10 , 13
100 , 95 , ____ , 85 , 80	____ , 44 , 38 , 32 , ____

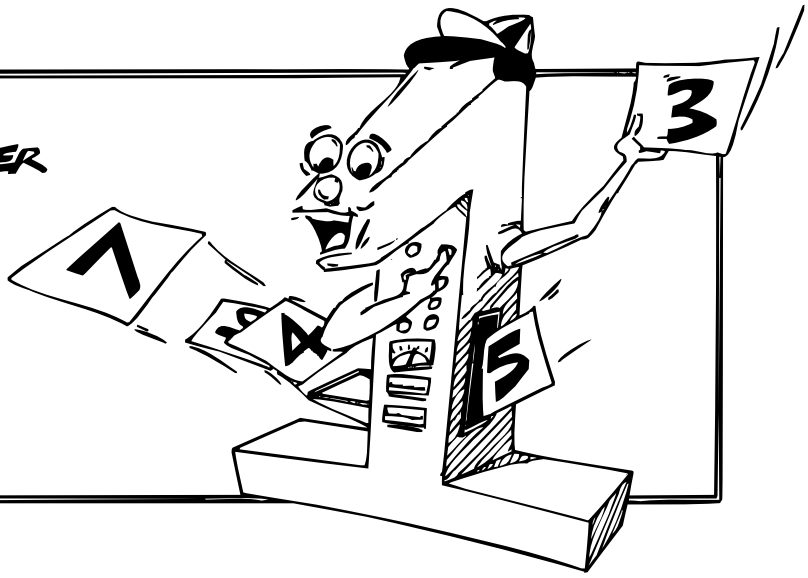
Look at these patterns.

999 x 2 = ____	55 x 5 = ____	37 x 3 = ____
999 x 3 = ____	555 x 5 = ____	37 x 6 = ____
999 x 4 = ____	5555 x 5 = ____	37 x 9 = ____
999 x 5 = ____	55555 x 5 = ____	37 x 12 = ____
999 x 6 = ____	1 x 1 = ____	37 x 15 = ____
999 x 7 = ____	11 x 11 = ____	
999 x 8 = ____	111 x 111 = ____	
999 x 9 = ____	1111 x 1111 = ____	

WONDER CALCULATOR

EVERYTIME YOU GIVE WONDER CALCULATOR A NUMBER, ANOTHER ONE POPS OUT!

WHAT IS WONDER DOING? FILL IN THE GAPS



IN	1	2	3	4	5	6	7	8
OUT	2	4	6					

The rule is .....

IN	1	2	3	4	5	6	7	8
OUT	6	7						

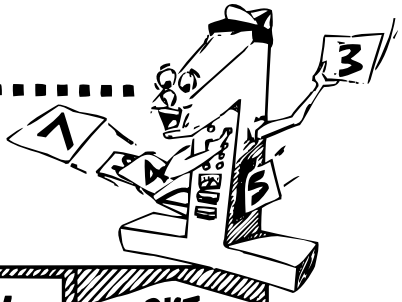
The rule is .....

IN	1	2	3	4	5	6	7	8
OUT	0	1	2					

The rule is .....

MORE WONDER CALCULATOR

Try these



IN	OUT
5	
10	30
15	
20	60
50	
100	
150	
	3000

RULE: .....

IN	OUT
10	5
11	
12	
15	10
20	
50	
100	
	145

RULE: .....

IN	OUT
10	5
12	6
14	
16	
18	
20	
50	
100	

RULE: .....

IN	OUT
5	
10	35
15	
20	
50	
100	125
150	
	1025

RULE: .....

IN	OUT
5	1
10	
15	
20	
50	10
100	
150	
	200

RULE: .....

IN	OUT
10	
11	
12	
13	
14	7
15	
50	
100	93

RULE: .....

Sometimes we get a letter to take the place of a number.
We call these letters pronumerals or variables.

$6 + 6 = 2 \times 6$ $\quad 13 + 13 + 13 = 3 \times 13$

$b + b + c = 2b + c$ $\quad a + a + a + x + x = 3a + 2x$

$a + a + a + a = 4 \times a$

$= 4a$

Now try these.

$a + a =$ _____ $\quad c + c + c + c =$ _____

$f + f + f =$ _____ $\quad g + g + g + g + g + g + g =$ _____

$x + x + x + x =$ _____ $\quad y + y + y + y + y =$ _____

$j + j + j + k + k + k =$ _____ $\quad m + m + m + m + m + p + p =$ _____

$2a + 4a = 6a$ $\quad 10p - 2p = 8p$

You can add or subtract terms that are the same.

Try these

$3b + 4b =$ _____ $\quad 5z + 2z =$ _____ $\quad 5y + 2y =$ _____

$13d + 14d =$ _____ $\quad 8x + 2x =$ _____ $\quad 13b + 22b =$ _____

$3n + 6n =$ _____ $\quad 14a + 16a =$ _____ $\quad 9d + 15d =$ _____

$42g + 16g =$ _____ $\quad 5t + 13t =$ _____ $\quad 18h + 19h =$ _____

$10p - 7p =$ _____ $\quad 14r - 12r =$ _____ $\quad 8s - 5s =$ _____

$27b - 18b =$ _____ $\quad 17b - 8b =$ _____ $\quad 25j - 15j =$ _____

$25k - 8k =$ _____ $\quad 11t - 5t =$ _____ $\quad 48w - 33w =$ _____

$32l - 16l =$ _____ $\quad 27p - 19p =$ _____ $\quad 31i - 27i =$ _____

$12r + 15r =$ _____ $16z - 12z =$ _____ $4t + 27t =$ _____

$27k - 12k =$ _____ $32p - 25p =$ _____ $42a + 19a =$ _____

$18c + 16c =$ _____ $21h - 7h =$ _____ $14t + 12t =$ _____

$14b + 19b + 27b + 2b + 6b =$ _____ $2m + 6m + 9m + 15m =$ _____

$12p - 6p + 3p + 5p - 8p =$ _____ $27q - 12q - 8q + 6q =$ _____

- SUBSTITUTING MEANS REPLACING A PRONUMERAL WITH A NUMBER!

EXAMPLES

$a = 6$, $b = 7$

$a + b = 6 + 7 = 13$ $\quad ab = 6 \times 7 = 42$

$b - a = 7 - 6 = 1$ $\quad \frac{a}{b} = \frac{6}{7}$

$a \div 2 = 6 \div 2 = 3$ $\quad 4b = 4 \times 7 = 28$

IF: $W = 1$, $Y = 4$, $Z = 12$
find the value of

$w + y =$ _____ $5 + y =$ _____ $Zy =$ _____

$Z - y =$ _____ $Z + w =$ _____ $Z \div 4 =$ _____

$2y + z =$ _____ $3w + 2y =$ _____ $Z + 6w =$ _____

g	h	i	j	k	l
100	12	5	0	7	10

Use the table to find the value of :

$h + i =$ _____ $\quad g \div l =$ _____

$k \times j =$ _____ $\quad l \div i =$ _____

$k \times l =$ _____ $\quad l - k =$ _____

$k \times l =$ _____ $\quad g \div i =$ _____

$i + k =$ _____

TRUTH SETS

EXAMPLE

$X + 5 > 12$ is an open sentence
X is called a variable

if $X = 2$ then $X + 5 > 12$ is false

if $X = 20$ then $X + 5 > 12$ is true

1 Complete this chart

Variable	Sentence	True or False
$X = 10$	$X + 7 > 15$	
$Y = 3$	$10 - Y = 5$	
$M = 5$	$M^2 = 25$	
$W = 2$	$W + 20 > 12$	
$J = 4$	$J^2 + 2 < 20$	
$C = 6$	$5C = 56$	
$E = 0$	$4E + 2 < 0$	
$K = 5$	$2K + 3 < 11$	
$R = 10$	$R - 6 < 4$	
$U = 15$	$U - 8 > 0$	

2 Find a truth set for each sentence.

Sentence	Truth Set
$X + 4 < 7$	{ 0, 1, 2, }
$3X > 12$	{ 5, 6, 7, ... ← THIS MEANS THE SEQUENCE GOES ON FOR EVER.
$X + 5 = 12$	
$X + 6 < 10$	
$X - 4 > 2$	
$X - 6 < 3$	
$5X > 20$	
$3X < 15$	
$18 + X > 3$	
$2X = 21$	

Work out the answers to the questions. Use them to crack the code.

5 + W = 17 W = _____	8 ÷ R = 4 R = _____	6 + O = 22 O = _____
4Y = 28 Y = _____	27 – B = 12 B = _____	2N = 38 N = _____
21 ÷ A = 7 A = _____	S + S + S = 18 S = _____	37 – T = 19 T = _____
U ÷ 6 = 6 U = _____	P – 8 = 20 P = _____	5E = 25 E = _____
H – 19 = 20 H = _____	X ÷ 10 = 5 X = _____	

– HOW DO YOU KNOW WHEN YOUR TEACHER HAS A CRUSH ON YOU?

"

6	39	5		28	36	18	6		3	19		50	15	7

7	16	36	2		3	19	6	12	5	2	6	

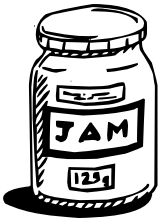
!"

WEIGHTS & MEASURES

TO WEIGH THINGS LIKE...

a letter

a jar of jam

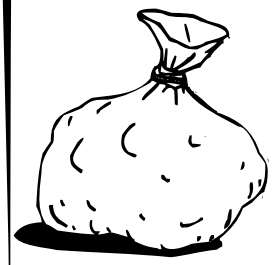


a packet of tea

...YOU USE GRAMS.

TO WEIGH...

a person

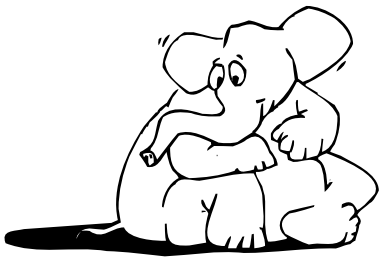


a sack of potatoes

gym weights

...YOU USE KILOGRAMS.

AND TO WEIGH



an elephant

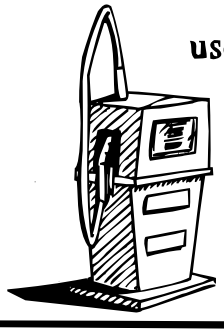
a truck

...YOU USE TONNES.

CAPACITY

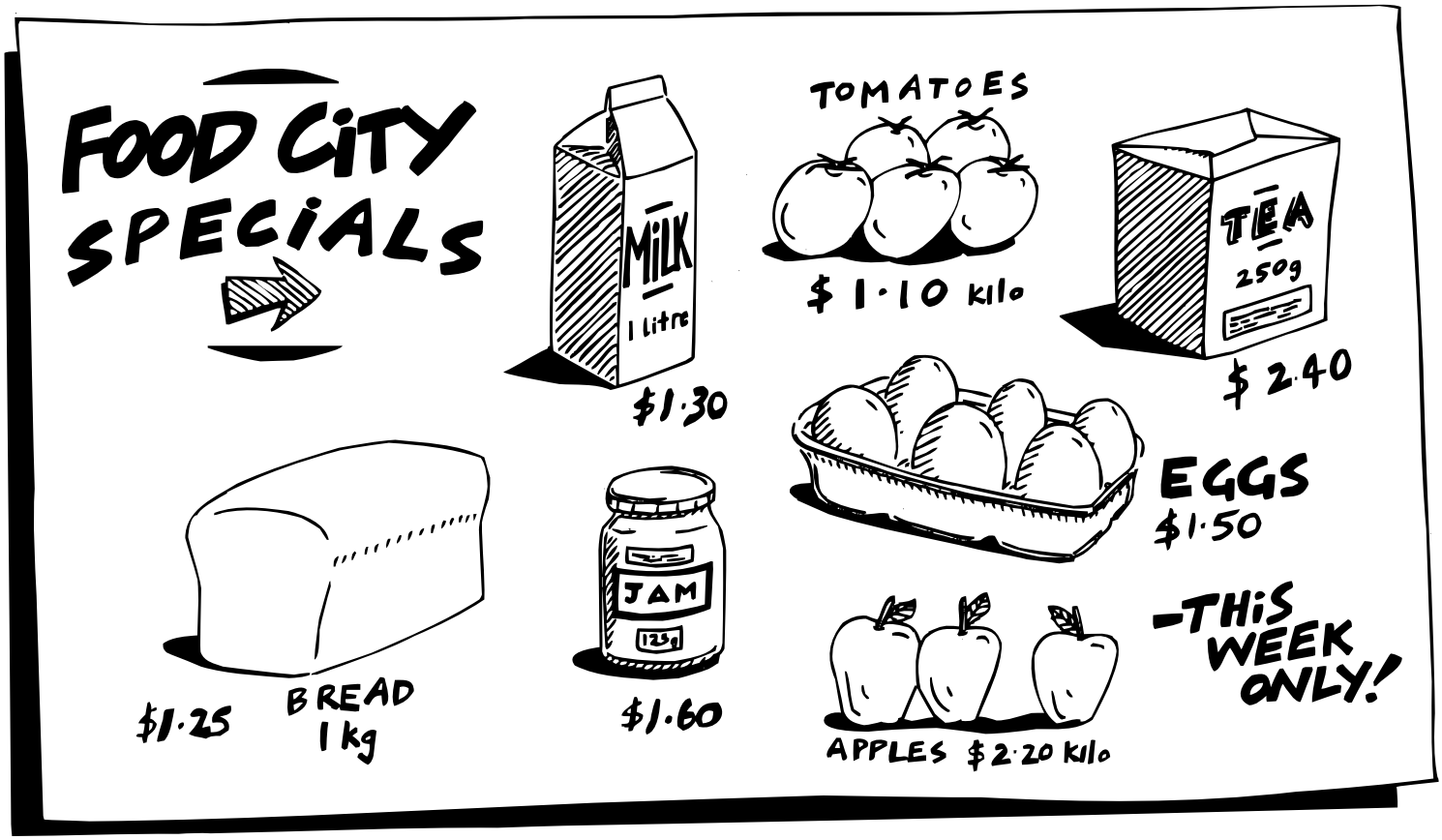
To measure medicine you use millilitres (ml)

for larger amounts,



use litres (l)

...AND FOR VERY VERY LARGE AMOUNTS, YOU USE KILOLITRES (kL)



1 How much for 1 litre of milk ? _____

2 How much for 2kg of tomatoes ? _____

3 Mrs. Ivan buys 1 packet of tea, 1litre of milk, and a loaf of bread.

She pays with a $5 note. How much change should she get? _____

_____

4 How much will 2 jars of jam weigh ? _____

5 How much will 4 packets of tea weigh ? _____

6 How much for $\frac{1}{2}$ kg of tomatoes ? _____

7 The loaf of bread can be cut into 20 slices.

How many grams will each slice weigh ? _____

_____

8 Mrs Ivan arrived home with her new packet of tea. She found she still had half a packet of tea at home. How many grams of tea does she now have ?

_____

9 Mr Sealy buys 1 dozen eggs, 3kg of apples, and a loaf of bread.

How much will it cost him ? _____

_____

-MORE MEASUREMENT MIXTURES!

REMEMBER

1000 millimetres = 1 metre

1000 metres = 1 kilometre

10 millimetres = 1 centimetre

100 centimetres = 1 metre

10mm = _____ cm

1000mm = _____ m

100cm = _____ m

1000m = _____ km

How many metres to the shopping centre ? _____

How many metres in 0.5km ? _____

You run 400m. How much further do you have to run to complete 1km ?

_____

You draw a line 5cm long. How many mm is this ? _____

A farmer is fencing a paddock. The sides 400m, 250m, 125m, 220m.

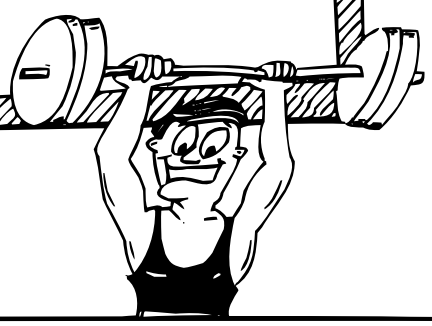
Approximately how long does his fence need to be ? _____

REMEMBER

1000g = 1kg kg = kilogram

1000kg = 1t t = tonne

g = gram



2300g = _____ kg

4600g = _____ kg

58 kg = _____ g

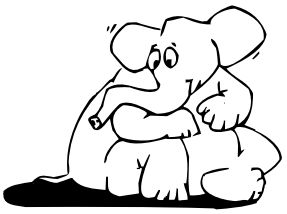
27 kg = _____ g

2t = _____ kg

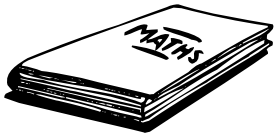
25t = _____ kg

2t,250kg = _____ kg

WHAT UNITS WOULD YOU USE TO MEASURE:



1. An elephant ? _____
2. A book ? _____



3. Your teacher ? _____
4. Your canary ? _____

5. Your baby sister ? _____
6. Your pen ? _____

7. Your desk ? _____
8. Your whole class ? _____

A water tank holds 20kl of water.

How many litres is this ?

_____

_____

A 1.25 litre of coke costs $1.50
How much will 3 bottles cost ?

_____

How many litres of coke
are you buying ?

_____

How many seconds in one minute ? _____

How many minutes in one hour ? _____

How many hours in one day ? _____

2 days = hours

180 minutes = seconds

2 weeks = days

28 days = hours

3 minutes = seconds

1 fortnight = days

52 weeks = year

1 century = years

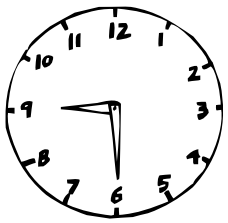
1 year = days

1 leap year = days

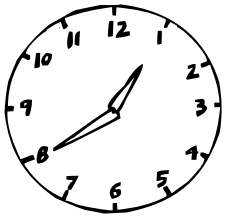
The next leap year is _____

READING THE TIME! - WRITE DOWN THE TIME SHOWN ON EACH CLOCKFACE

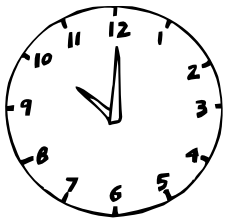
1 Morning



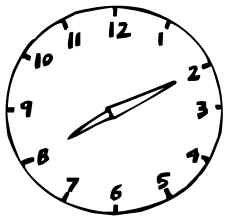
2 Afternoon



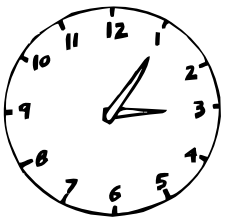
3 Evening



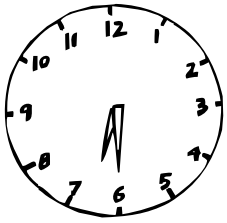
4 Morning



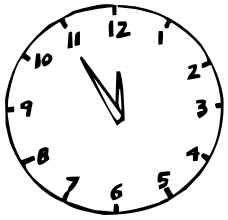
5 Afternoon



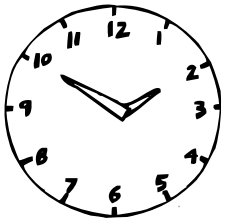
6 Evening



7 Morning

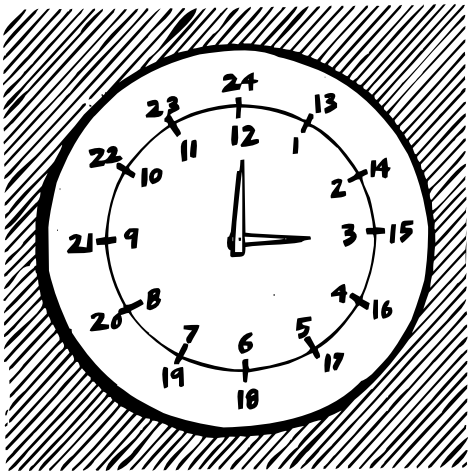


8 Afternoon



9 Evening

Time in Words	Time in Numerals
Ten minutes to nine (morning)	8.50am
Twenty five minutes past six (evening)	
Quarter past three (afternoon)	
Half past six (evening)	
	3.50pm
	12.15pm
	8.45am
	9.10am



THIS CLOCK SHOWS 24 HOUR TIME

The inside numerals are for the morning.
The outside numerals are for afternoon times.
3pm would be 15.00 hours (fifteen hundred hours)

COMPLETE THIS TABLE!

Clock time	24 hour time
6.00am	
1.00pm	
3.15pm	
9.00pm	
10.20am	
	16.30h
	23.00h
	06.15h
2.25pm	
	17.55h

1 How long is it from 6.30pm to midnight ?

_____

2 The bus picks you up at 7.55am.

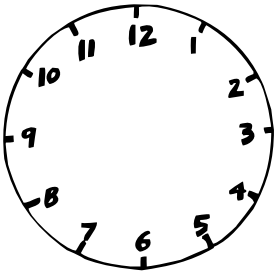
You hear that it is 7 minutes late.

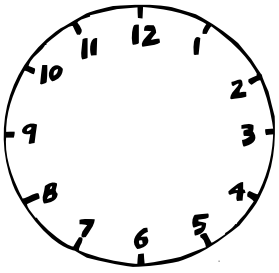
What time will it arrive ?

_____

3 On the clock faces below, draw the time showing

3.47 and 11.10.





4 Write down other ways of saying;

9.30 _____

1.55 _____

6.10 _____

5 When would we use a 24 hour clock time ?

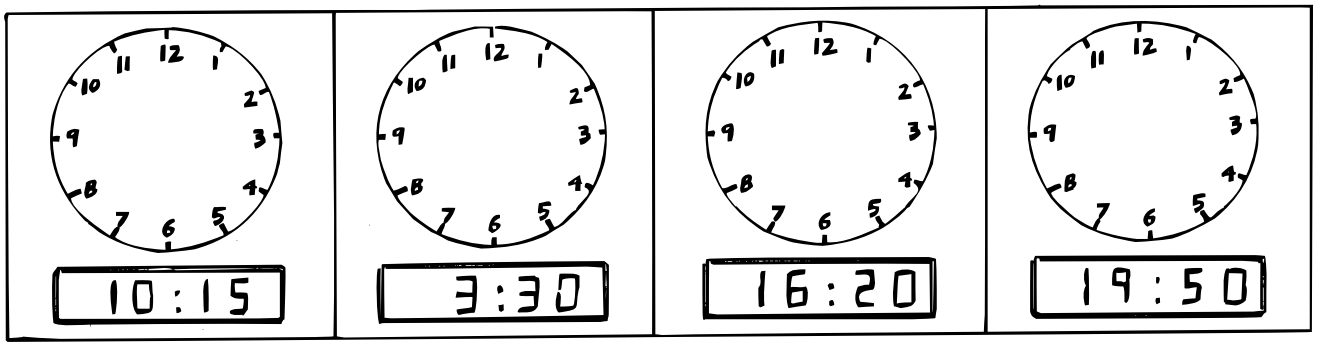
_____

_____

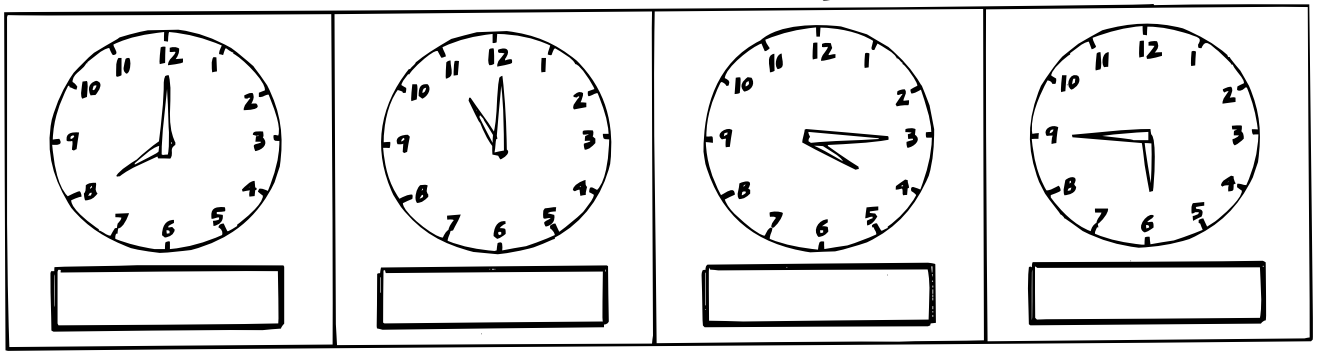
_____

WATCH TIME FLY!

Draw in the hands so that each clock shows the same time as the digital clock.



Now transfer these times on to the digital clocks.



Which unit, one second, one minute, or one hour, would you use to measure the time:

1. To mow the lawn ? _____
2. To sharpen your pencil ? _____
3. To get from home to school ? _____
4. To do your maths homework ? _____
5. To wash your hands ? _____
6. To write your name ? _____
7. To play your favourite sport ? _____

JUST A MINUTE

How many times can you write your name in one minute ? _____

How far can you run in one minute ? _____

How many jokes can you tell in one minute ? _____

How many times can you bounce a ball in one minute ? _____

BUS TIMETABLE	DEPARTS
PROTRACTORUA	9·15
RULERVILLE	9·20
MATHCHURCH	10·05
PENCIL CROSS	11·15

When does the bus depart Rulerville ? _____

How long is the journey from;

Rulerville to Mathchurch ? _____

Protractorua to Pencil Cross ? _____

Are these times likely to be am or pm ? _____

LEARNING THE CALENDER

A calender helps us measure time. The units on a calender are months, weeks, and days.

LEARN THIS POEM...

30 days has September,

April, June and November.

All the rest have 31, except February alone,

which has 28 days clear,

but 29 days each leap year.

...AND THESE FACTS

1 week = 7 days
365 days = 1 year
1 year = 12 months
10 years = 1 decade
52 weeks = 1 year
366 days = 1 leap year

1. JANUARY
2. FEBRUARY
3. MARCH
4. APRIL
5. MAY
6. JUNE
7. JULY
8. AUGUST
9. SEPTEMBER
10. OCTOBER
11. NOVEMBER
12. DECEMBER

1. How many days in one year ? _____
2. How many months in one year ? _____
3. Which months have 30 days ? _____

_____

4. Which months have 31 days ? _____

_____

5. Every 4 years is a leap year, where February has 29 days.
How many days does February usually have? _____
6. Is 1995 a leap year ? _____
7. When is the next leap year ? _____
8. Write down the dates of Monday during December. _____
9. Write down the day of the week for these dates.

1st October _____ 30th May _____ 1st January _____

11th September _____ 7th June _____ 15th August _____

10. How many Tuesdays in March ? _____
11. How many months have 5 Wednesdays ?
12. How many weeks between 1st September and 20th October ? _____
13. How many years in a decade ? _____
14. How many weeks in 1 year ? _____

1 Avalon swims 3 lengths of a 50m pool.

How far did she swim ? _____

2 Jason runs 2 laps of the 400m track.

How far does he run ? _____

3 Hine is 152cm tall. Lenny is 164cm tall.

How much taller is Lenny ? _____

4 132cm can be written as 1.32m
Write these measurements the same way.

148cm _____

522cm _____

6541cm _____

5 Name an example when you would use these units to measure

mm _____

cm _____

m _____

km _____

6 What unit of measure would you use to measure;

The length of a pencil _____

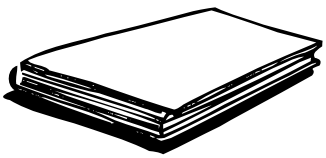
Your height _____

Auckland to Wellington _____

The thickness of a coin _____

The length of a rugby field _____

The depth of a swimming pool _____



The length of this book _____

(mm, cm, m, or km)

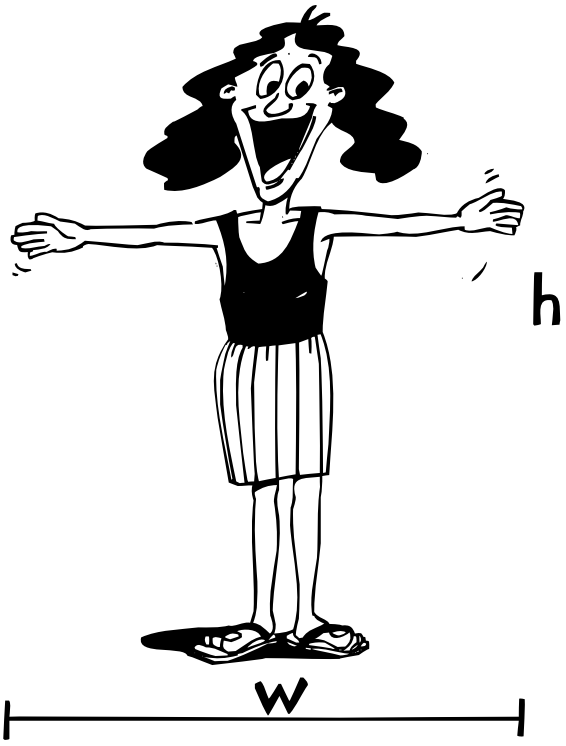
-HOW DO YOU MEASURE UP?

Choose 5 people and measure the length of all their fingers.

-RECORD YOUR MEASUREMENTS! (USE mm)

	Little finger	Ring finger	Middle finger	Index finger	Thumb
Name 1					
Name 2					
Name 3					
Name 4					
Name 5					

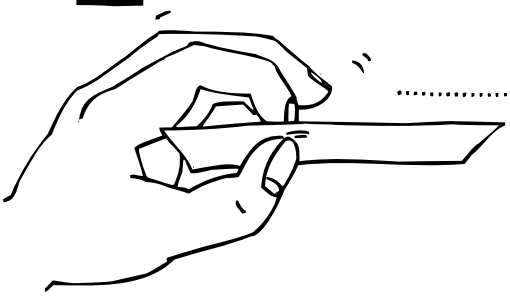
-NOW MEASURE THEIR HEIGHT AND ARM SPAN!



Names	Height	Arm span
1		
2		
3		
4		
5		

MEASUREMENT PROBLEMS!

1 How thick is a piece of paper ?



.....

2 Measure the thickness of a book

.....

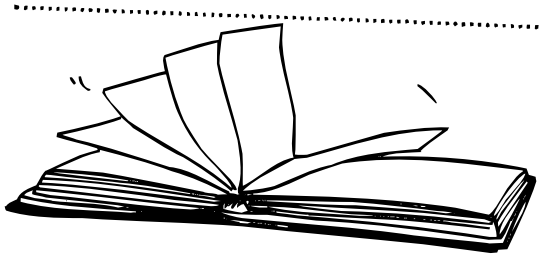
Did you include the covers ?

Write the calculation needed to work out the thickness of one page. .....

.....

How thick is one page ?

.....



3 HOW FAST DO YOU WALK?

Walk 100 metres while your partner times you with a stop watch.....

Time your partner while they walk 100 metres..

.....

Using the times you took to walk 100 metres, calculate the time it would take you to walk 1 kilometre at the same speed. .....

.....

Now calculate the number of kilometres you could walk in one hour at this speed. .....

.....

What is your walking speed in kilometres per hour ?

.....

WITHOUT MEASURING, DRAW A LINE:

1 10mm

2 10cm

3 175mm

NOW MEASURE. HOW ACCURATE WERE YOU?

Name some common objects that are;

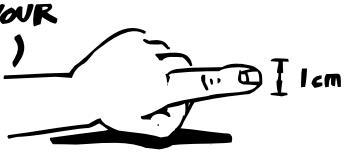
10mm long	10cm long	30cm long

MEASURING LENGTH

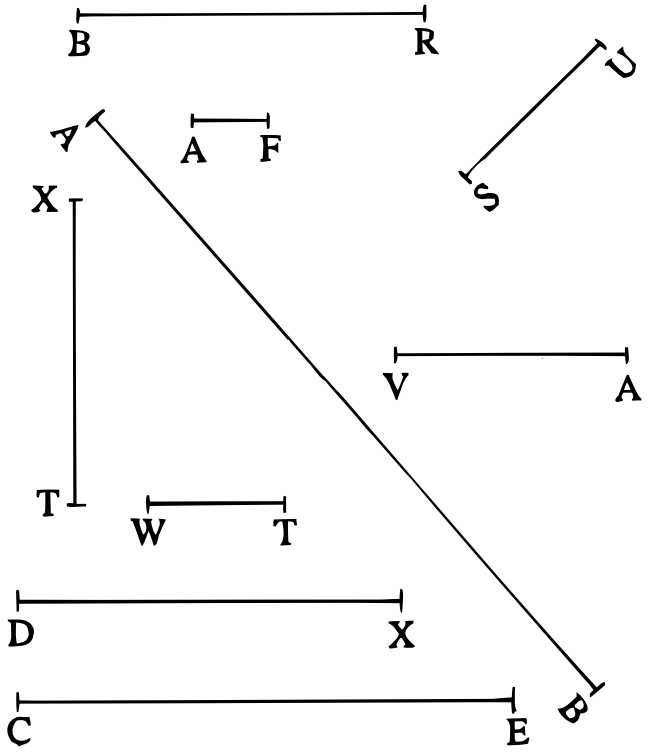
The unit of measure we use most is the centimetre (cm)
For a more accurate measure we use millimetres (mm)

Estimate each length below in cm. Then measure to see how close your estimate is to the actual length.

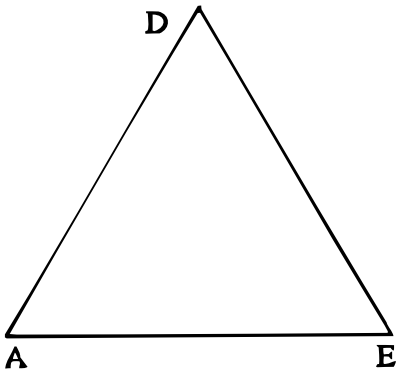
(TO HELP YOU ESTIMATE, REMEMBER THE WIDTH OF YOUR FINGER IS ABOUT 1cm)



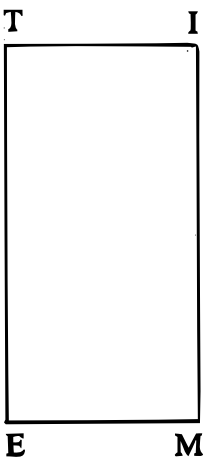
Length	Estimate	Measure
AB		
DX		
CE		
AF		
QU		
BR		
SU		
XT		
VA		
WT		



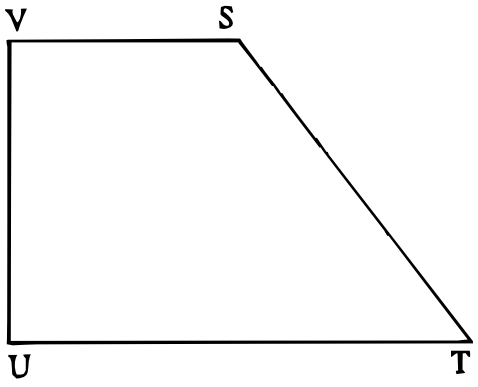
The perimeter of a shape is found by adding the length of each side.
Find the perimeters of these shapes.



Line	Length
AD	
ED	
EA	
Perimeter	

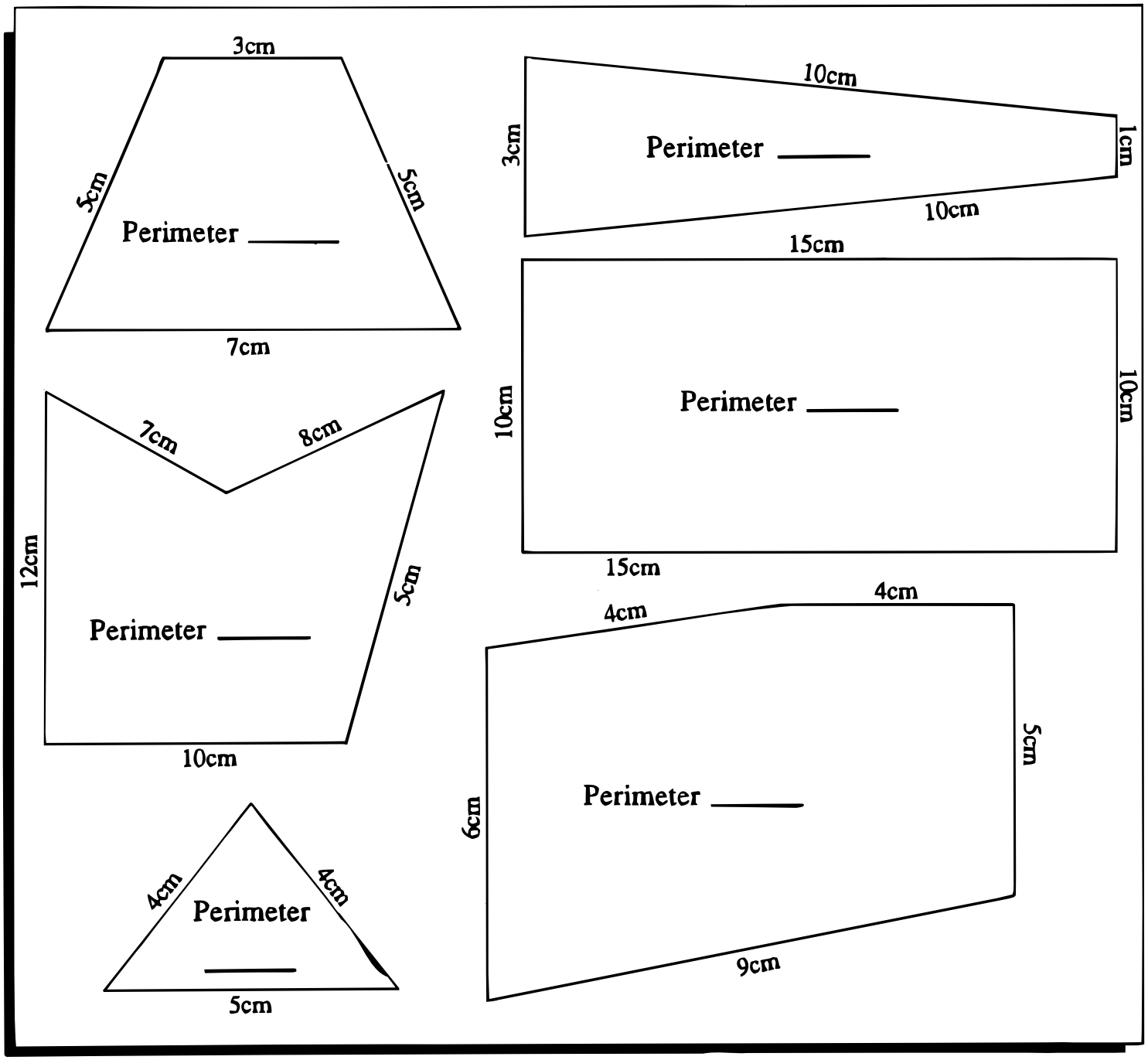


Line	Length
TI	
IM	
ME	
ET	
Perimeter	



Line	Length
VS	
ST	
TU	
UV	
Perimeter	

- Here the lengths are given. Write the perimeter of each shape.

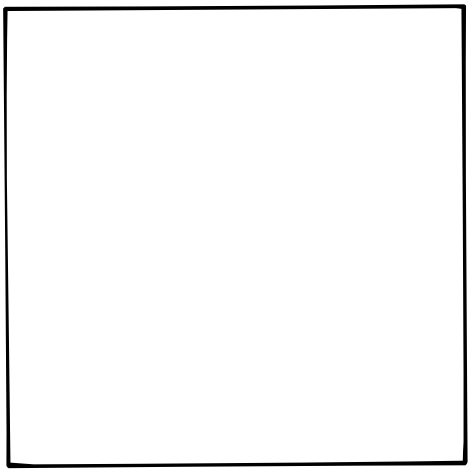


- REMEMBER THIS

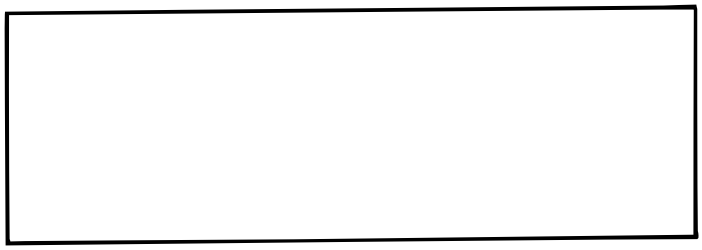
100 cm = 1 metre
1000 m = 1 km
10 mm = 1 cm
1000 mm = 1 m

IT'S NOT HARD!

AREA



SQUARE



RECTANGLE

Measure the lengths of all the sides of the above square.

Side 1. _____ Side 2. _____

Side 3. _____ Side 4. _____

Give a definition for a square. _____

_____

_____

Now measure the lengths of all the sides of the rectangle.

Side 1. _____ Side 2. _____

Side 3. _____ Side 4. _____

Give a definition for a rectangle. _____

_____

_____

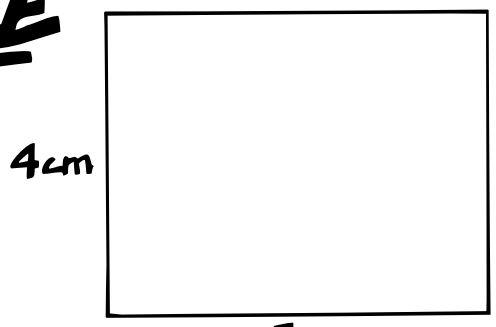
You should have discovered this:

ALL SIDES OF A SQUARE ARE EQUAL.

OPPOSITE SIDES OF A RECTANGLE ARE EQUAL.

- The area of a figure is the space taken up by that figure.
  To find the area we multiply the length by the breadth.

RULE

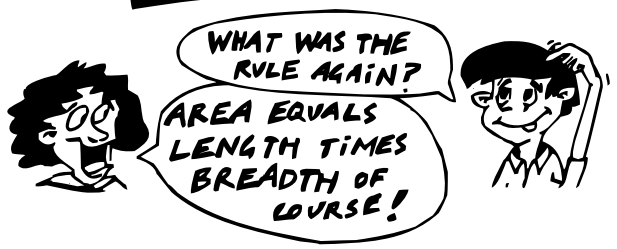


AREA = LENGTH × BREADTH

AREA = 4cm × 5cm

AREA = 20cm

USE THE RULE TO FIND THESE AREAS!



AREA = _____

2cm

2cm

AREA = _____

2cm

6cm

11cm

AREA = _____

6cm

5cm

1cm

AREA = _____

AREA = _____

9cm

9cm

AREA = _____

2.5cm

8cm

3 cm

AREA = _____

5.5cm

AREA = _____

4cm

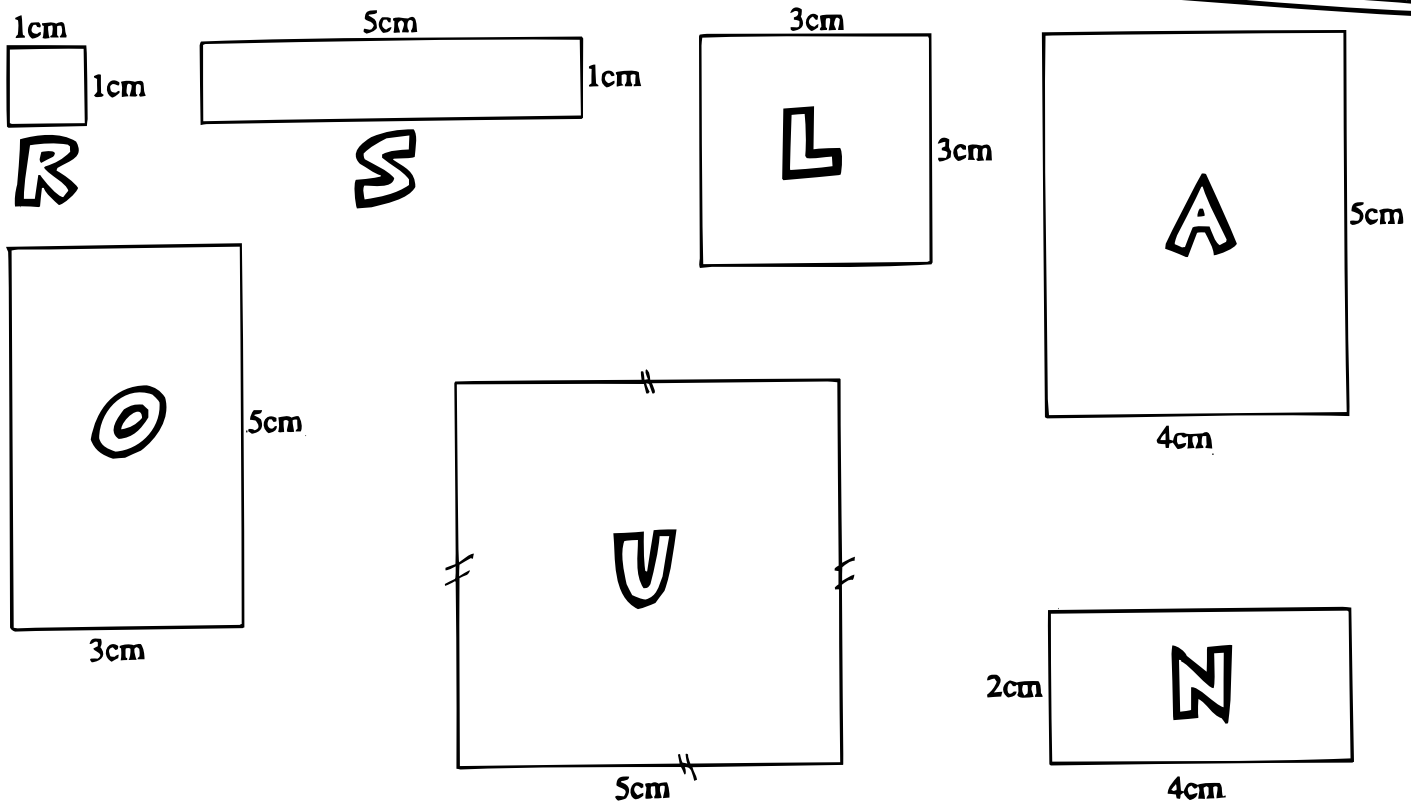
12cm

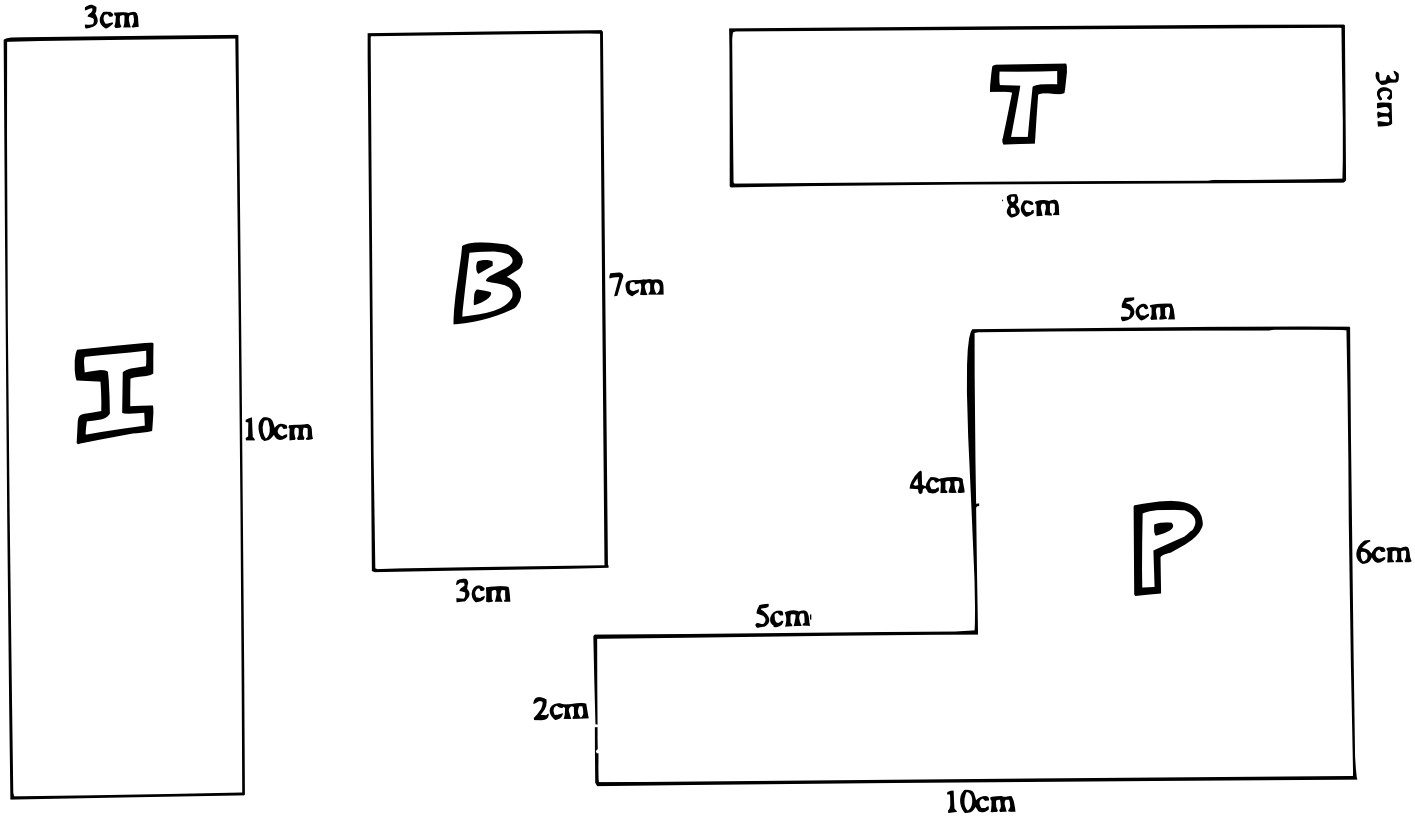
AREA = _____

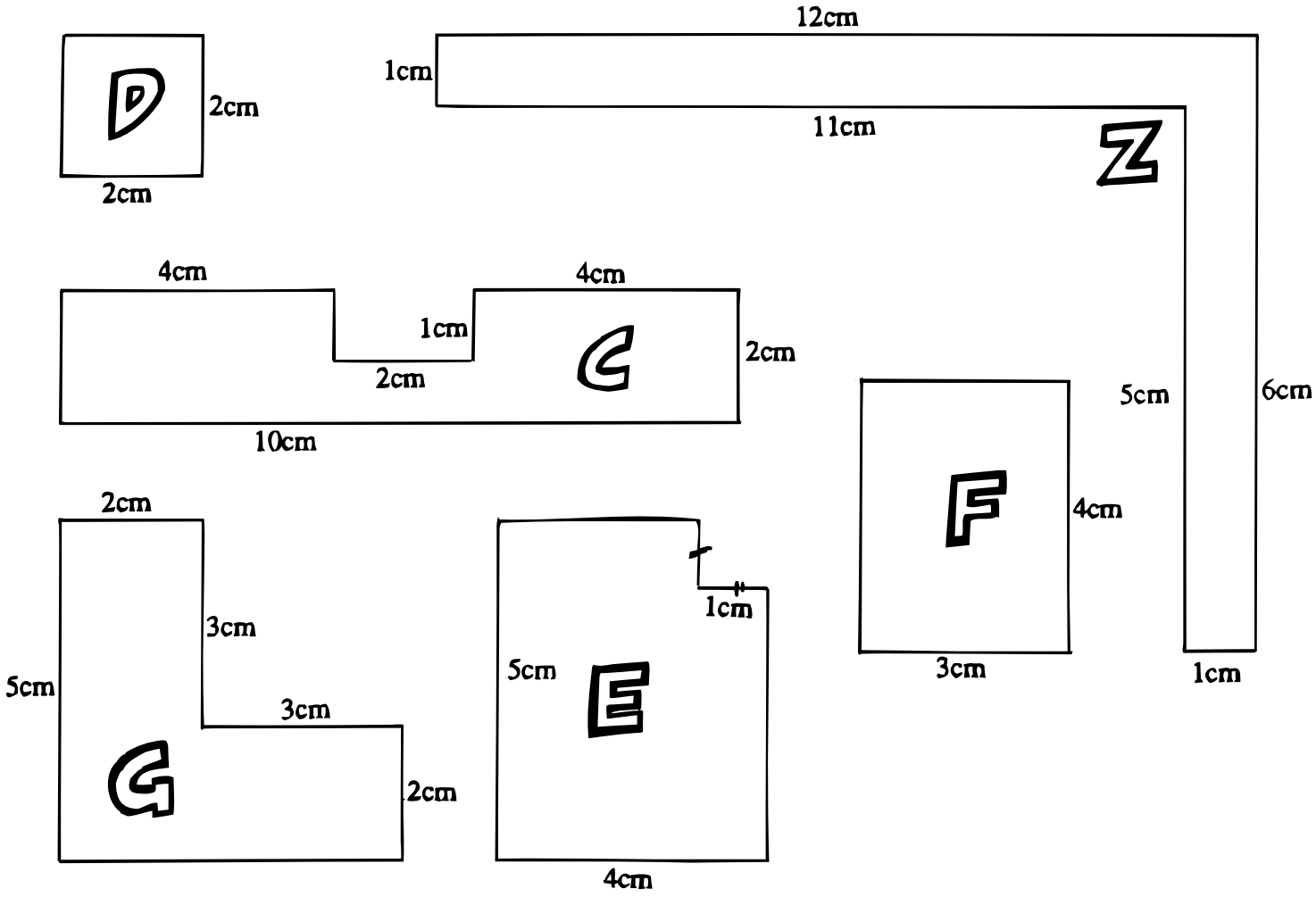
4cm

4.5cm

-ON THE NEXT 2 PAGES, USE THE AREAS TO WORK OUT THE AUTHORS OF THESE BOOKS FROM THE PRISON LIBRARY!







1 The Gangsters, by

1	15	21	30	8		5	24	19	19	9	19

2 My Life in Crime, by

25	40	24	15			8	15	16	15	15	4

3 Bad Money, by

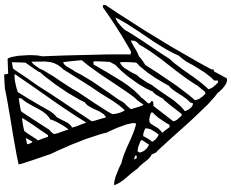
18	15	25	8	24	1	12	30	24	17

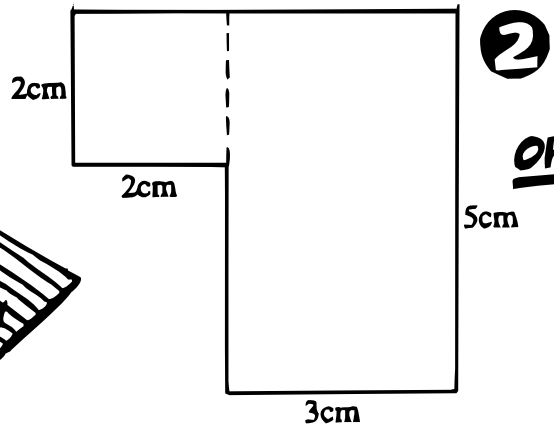
4 You Always Get Caught, by

5	25	19		8	15	1	20		9	20	24	19	1

- SOME SHAPES ARE A COMBINATION OF SQUARES AND RECTANGLES.

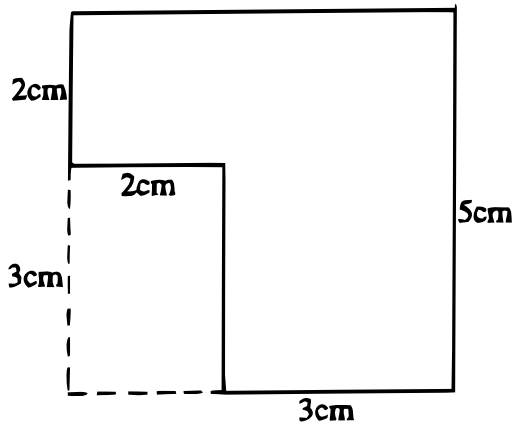
1





2

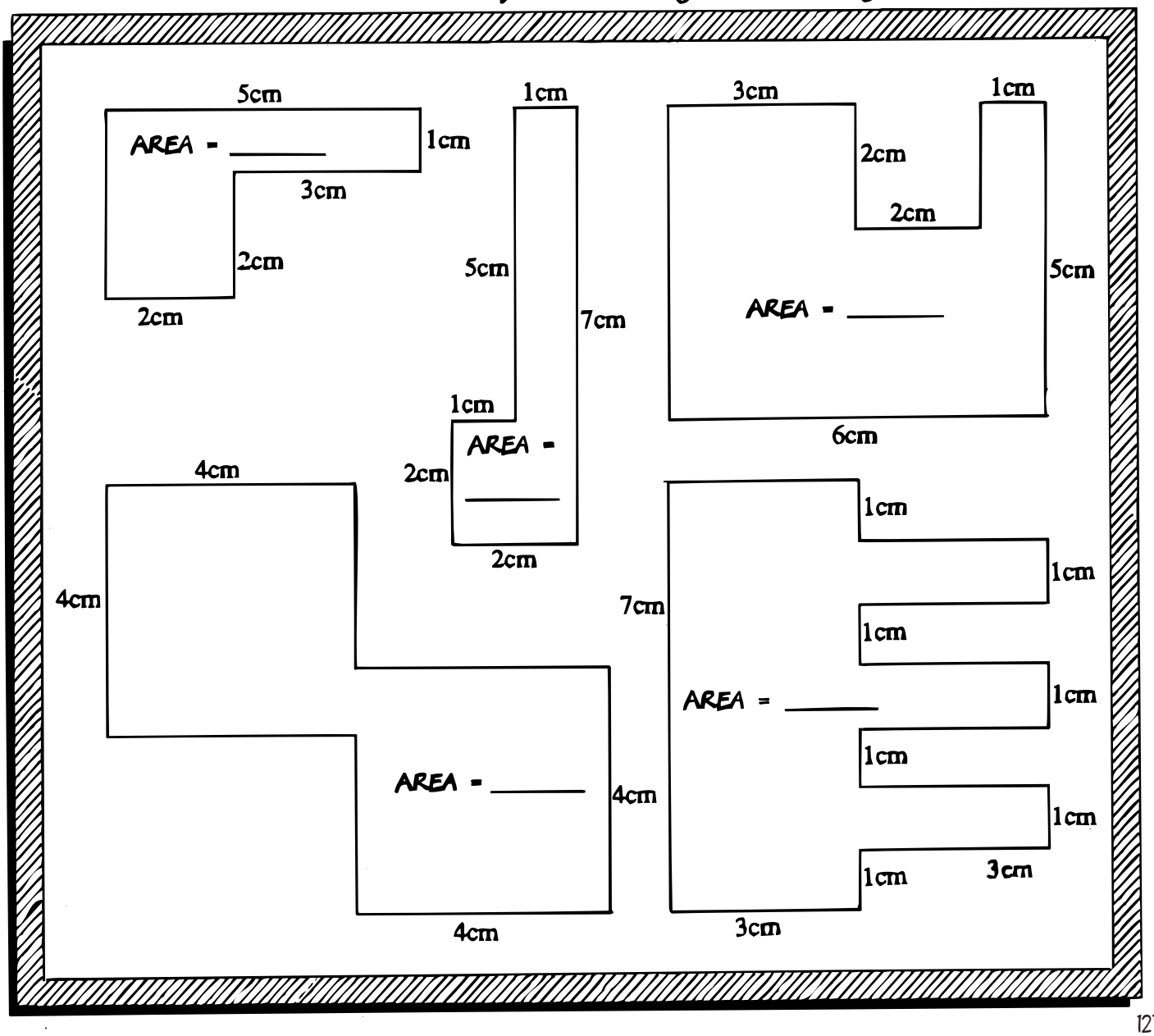
OR



AREA = (2×2)+(5×3)
= 4 + 15
= 19 cm²

AREA = (5×5)-(3×2)
= 25 - 6
= 19 cm²

Find these areas by either adding or subtracting.



MEASURE MIXTURES!

Can you remember this?

1 _____ mm = 1cm 2 _____ cm = 1m 3 _____ m = 1km

CALCULATE THESE!

3.5cm = _____ mm

76mm = _____ cm

3200m = _____ km

2.6km = _____ m

2.65m = _____ cm

220cm = _____ m

240mm = _____ cm

68cm = _____ mm

Here are some common sayings.
What do they mean ?

"It's only a stone's throw away."

How far is a stone's throw ?

_____

"The shop is five minutes away. "

How far is five minutes ?

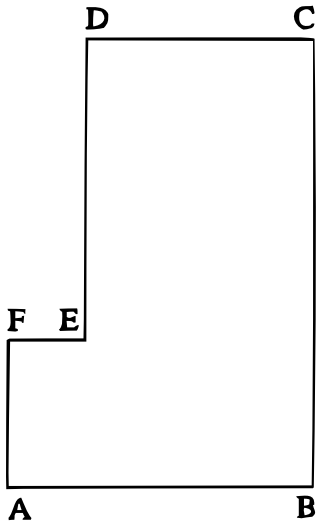
_____

"It's just a hop, skip, and jump from here."

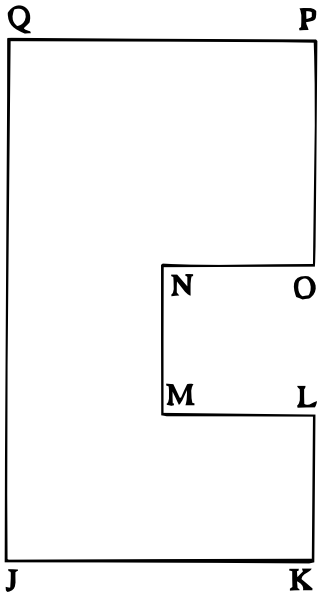
How far is a hop, skip and jump ?

_____

Measure each side and write it in the table.
Find the perimeter and area of each shape.



AB = _____
BC = _____
CD = _____
DE = _____
EF = _____
FA = _____
Perimeter =
_____
_____
_____
_____
Area =
_____
_____
_____

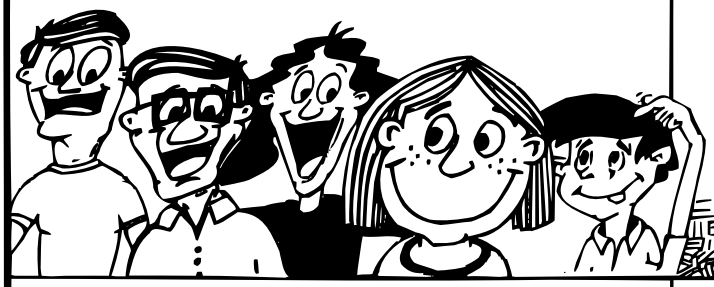


JK = _____
KL = _____
LM = _____
MN = _____
NO = _____
OP = _____
PQ = _____
QJ = _____
Perimeter =
_____
_____
Area =
_____
_____
_____

- THE - MIGHTY MATHS - CLASSROOM CHALLENGE

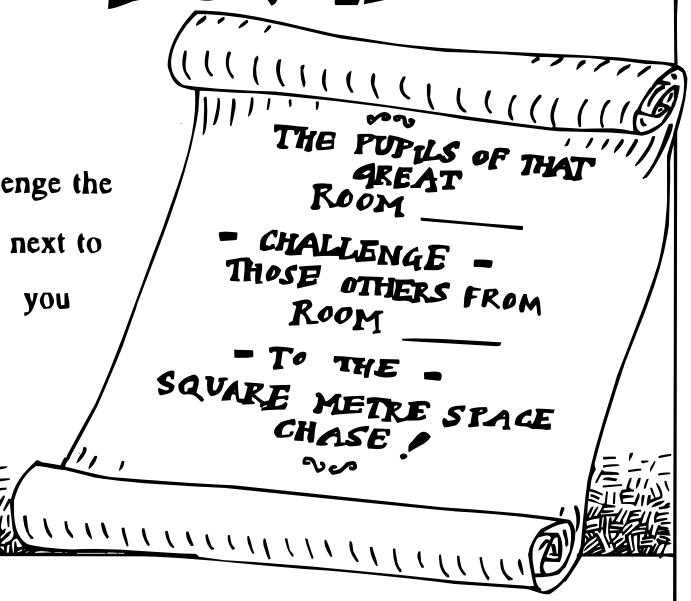
1

How many children can fit into a square metre?



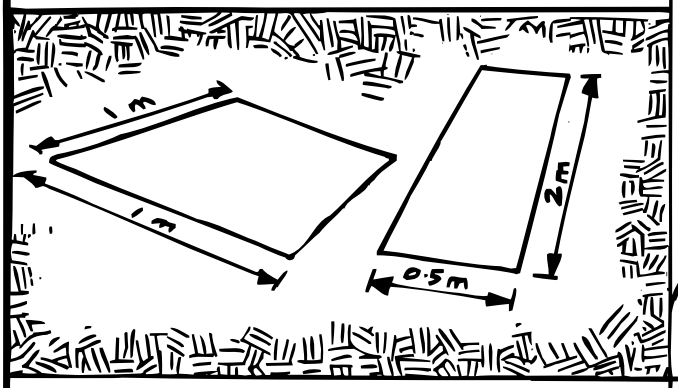
2

Challenge the class next to you



3

Each class should mark out their square metre and have it checked.



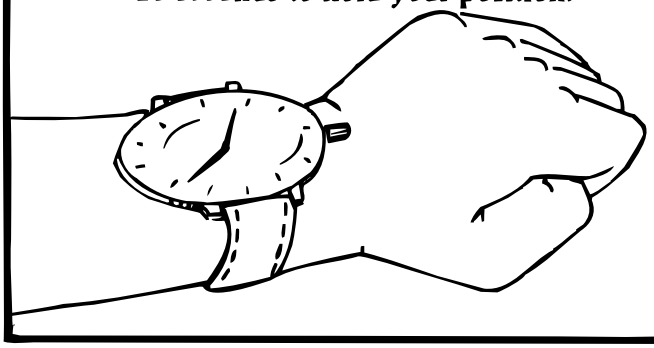
4

On the whistle blow each class has 2 minutes to get as many pupils into their square metre.

Work out whether you should lie down, stand, sit, or climb on top of each other.

5

After the 2 minutes, another whistle blow. You now have 10 seconds to hold your position.



6

Get the principal out of the office to be the judge.

COLLECTING DATA!

What you will need: Ruler Pencil Rubber Unsuspecting Friend

What to do

1. Measure your friend's middle finger of the hand that they use for writing to see how long it is (in millimetres).
2. Make sure you measure from the very bottom where the fingers are joined to the very tip.

3. How long was it? _____ millimetres.
4. Once everybody's finger has been measured, get your teacher to record all the different measurements on the board.
5. Who had the longest finger? _____ How long was it? _____
6. Who had the shortest finger? _____ How long was it? _____
7. What was the finger length that happened most often? _____

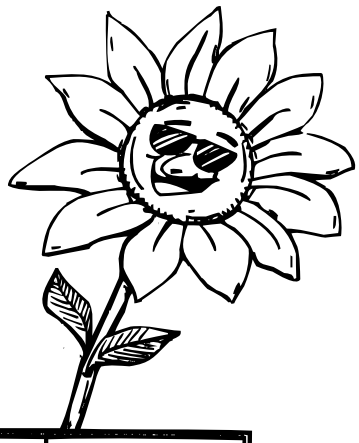
   How many people had a middle finger this long? _____
8. Now draw a table to organise all the data that your teacher has on the board. Start off by writing down all the different finger measurements, starting with the smallest and working up to the biggest.

Finger Length	Number of People

Now, next to each finger length, write down the number of people who had a finger this long

CHECK that you haven't missed anybody out by adding the number of people in your class. Now add up how many results you have. (Don't forget to count yourself!) Both totals should be the same.

Pesa planted a sunflower seed and recorded how much it had grown each day



Day	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Height (cm)	0	0	1	2	4

1 How much did the sunflower grow between DAY 1 and DAY 2 ?

_____

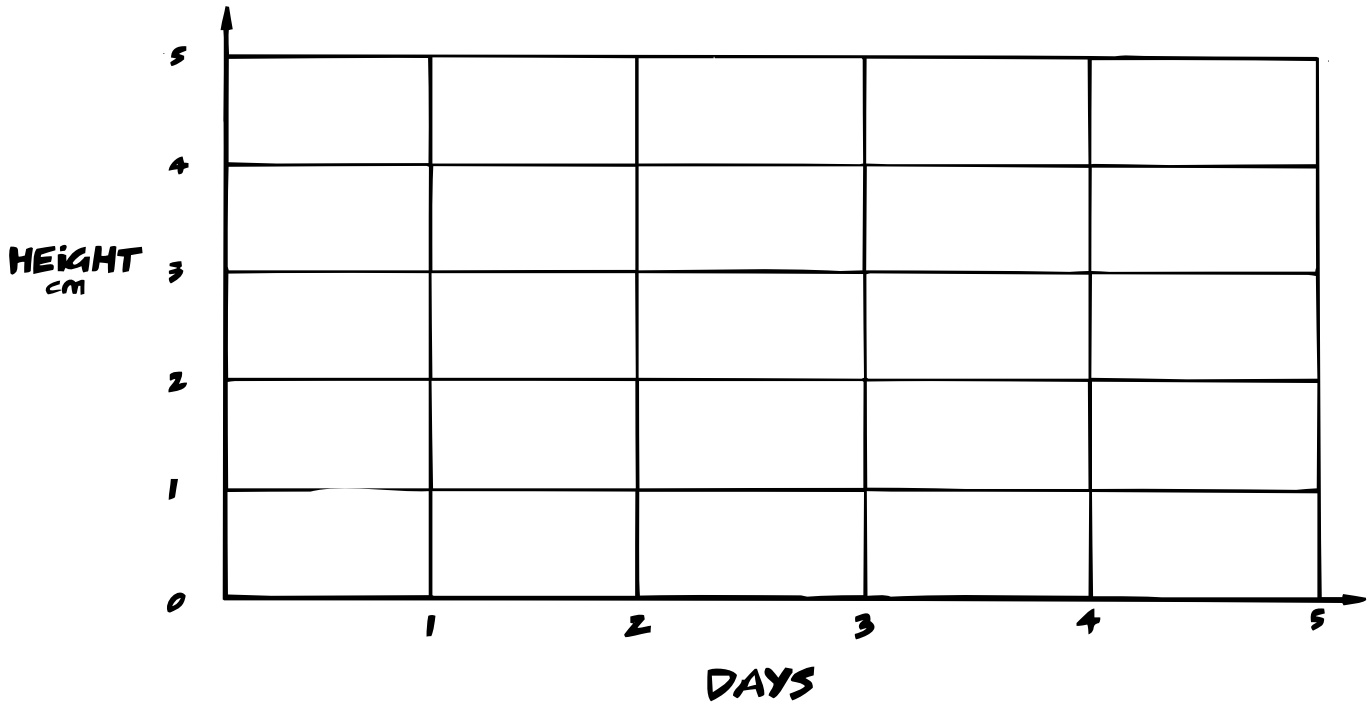
2 How tall was the sunflower on DAY 4?

_____

3 On which day was the sunflower the tallest?

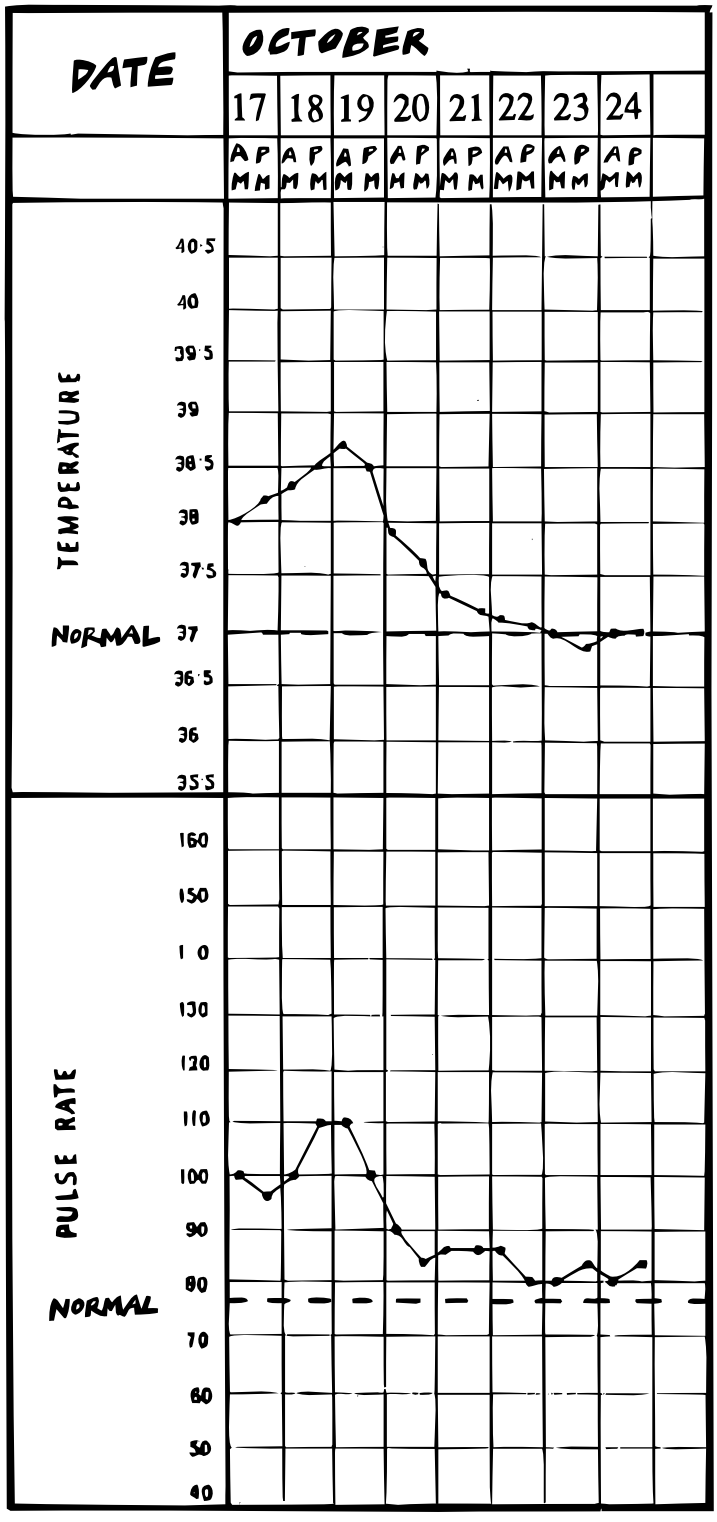
_____

4 Plot on the graph below how tall the sunflower was each day.



AT THE HOSPITAL

Here is a temperature / pulse chart taken from a patient at Waikato Hospital. Note: The temperatures and pulses were taken twice each day.



ANSWER THESE QUESTIONS

On October 17 pm the patient's temperature was ..... °C and pulse rate was .....

A temperature of 37.4°C was recorded on .....

The pulse rate was then .....

The highest temperature was ..... °C above normal temperature

On what day would the patient be feeling the sickest? .....

The greatest drop in temperature for any 12 hours began on the night of .....

Does this mean the patient would begin to feel better? .....

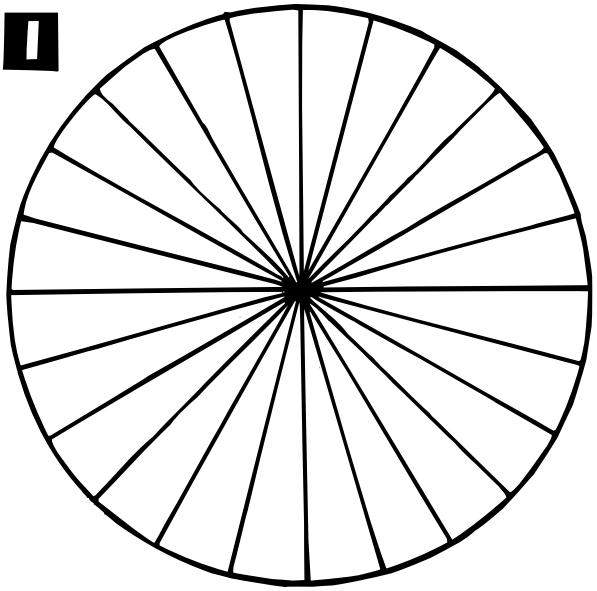
What can you say about this person's heart rate? .....

USING FRACTIONS

You can show information on a pie chart.

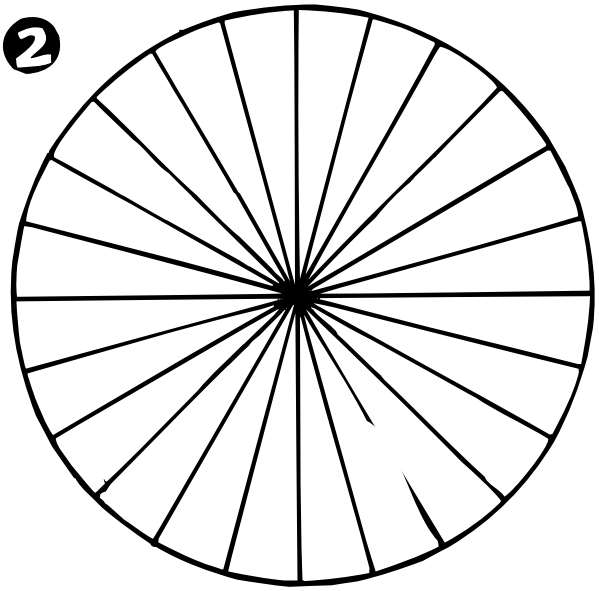
The pie charts below are divided into 24 parts. Each part represents one hour of the day.

1



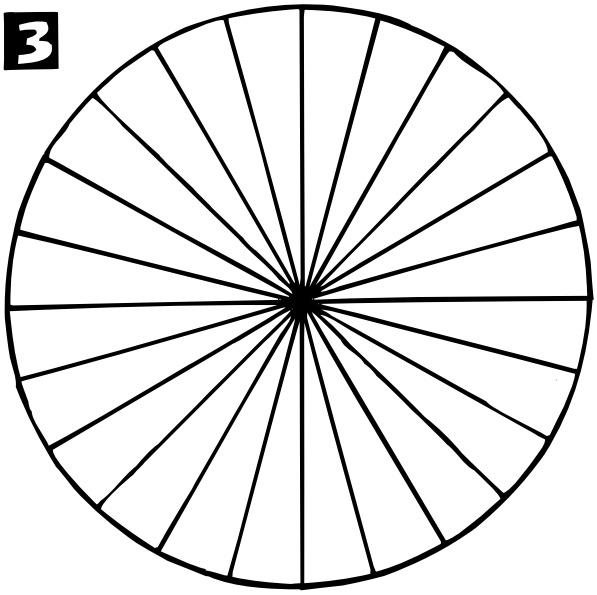
NAME .....

2



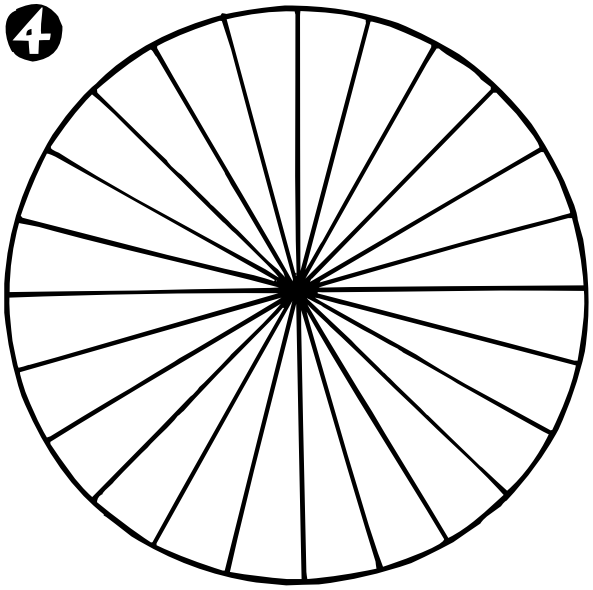
NAME .....

3



NAME .....

4



NAME .....

Colour in the first pie chart to show how you spent yesterday. Fill it out for three friends as well.

School Eating Working T.V. Playing Sleeping

Who spent the most time at school ? .....

Who spent the most time playing ? .....

Who spent the most time working ? .....

Who spent the most time watching television ?

.....

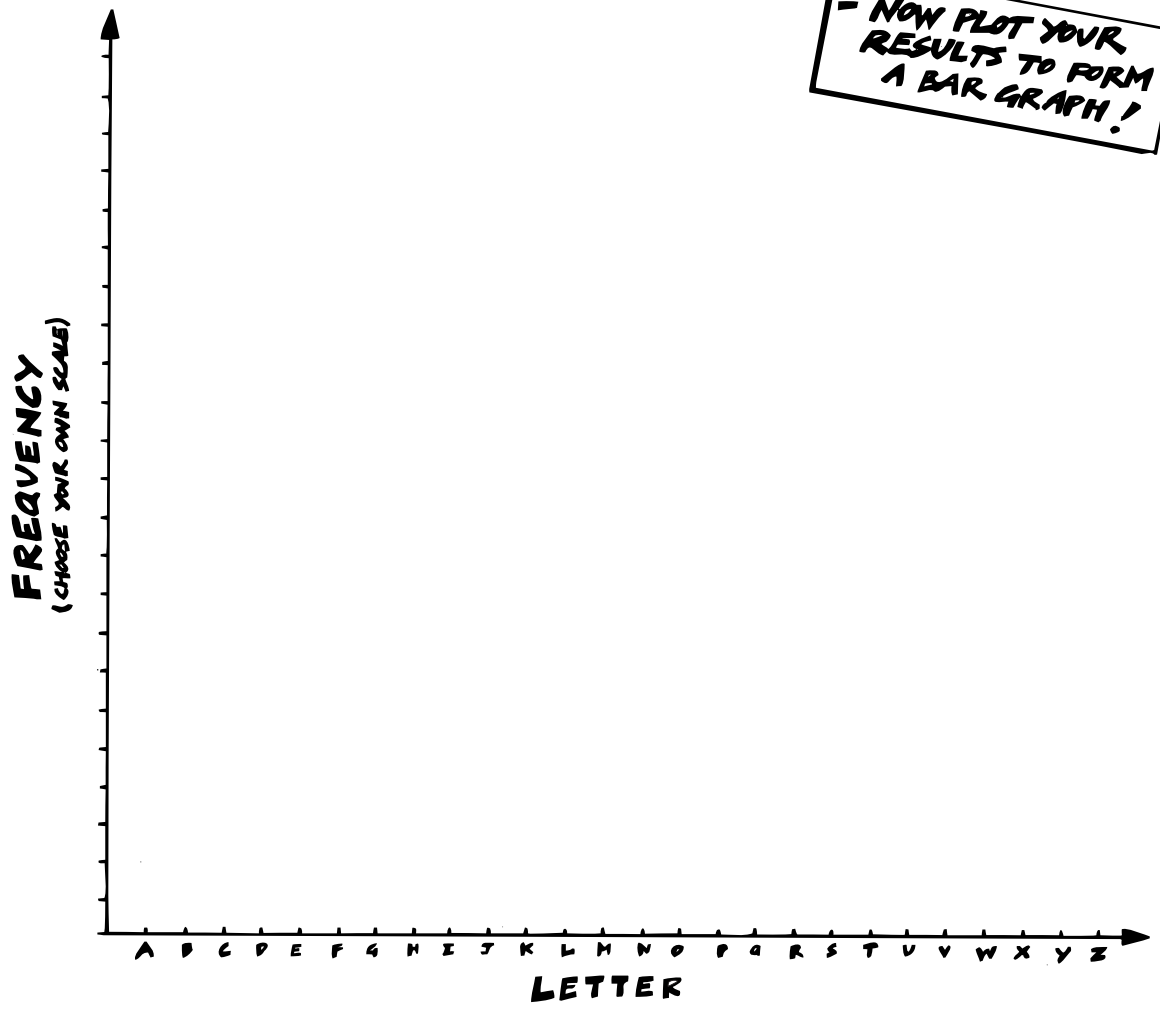
BOOKWORM BONANZA!

- TAKE A BOOK AND SELECT A PAGE. COUNT HOW MANY TIMES EACH LETTER OF THE ALPHABET APPEARS ON THAT PAGE, AND FILL IN THE TABLE BELOW.

	FREQUENCY		FREQUENCY		FREQUENCY		FREQUENCY
A		H		O		V	
B		I		P		W	
C		J		Q		X	
D		K		R		Y	
E		L		S		Z	
F		M		T			
G		N		U			

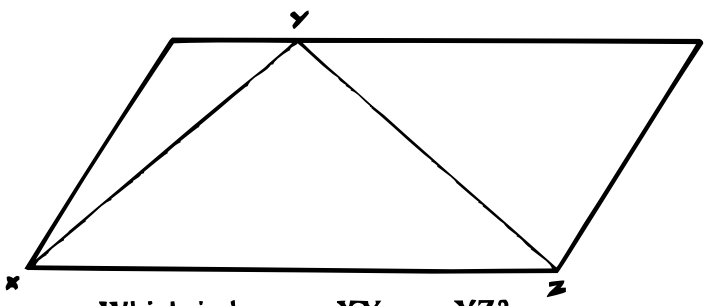
Which letter was most popular? _____

- NOW PLOT YOUR RESULTS TO FORM A BAR GRAPH!



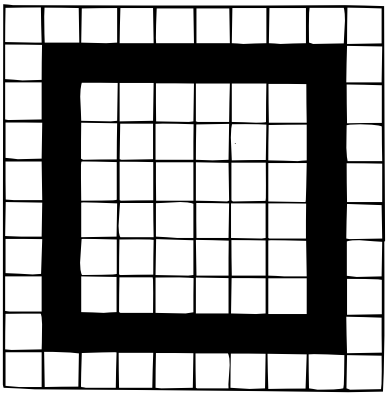
- DO YOU ALWAYS BELIEVE WHAT YOU SEE?

1



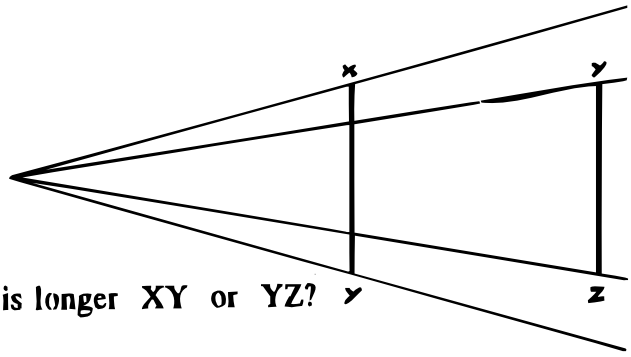
Which is longer XY or YZ?

2



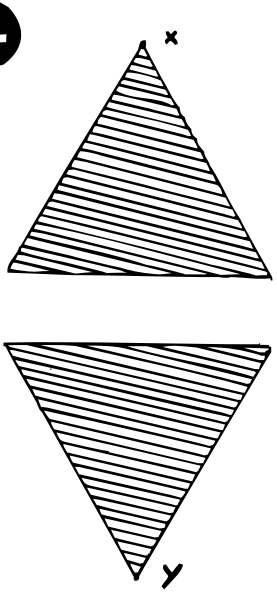
Which area is greatest?
The Inside or the
Outside?

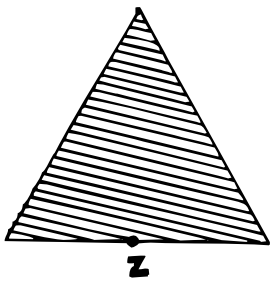
3



Which is longer XY or YZ?

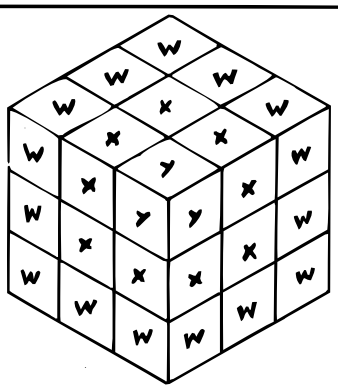
4

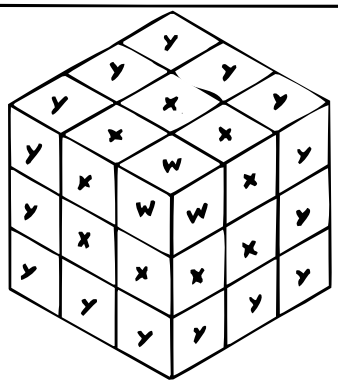




Which is longer
XY or YZ?

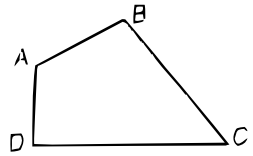
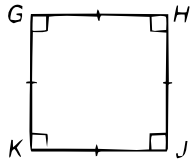
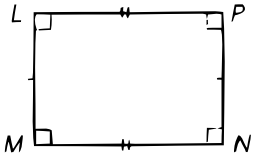
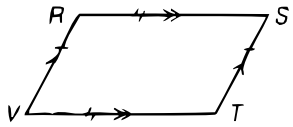
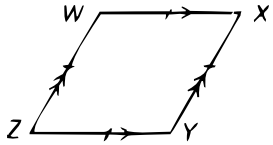
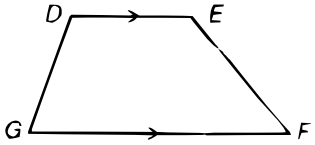
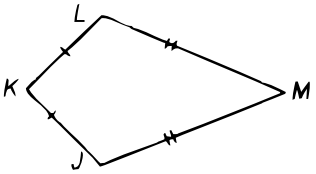
5





Shade the W's heavy
Shade the X's light
Shade the Y's very light
What is the difference?

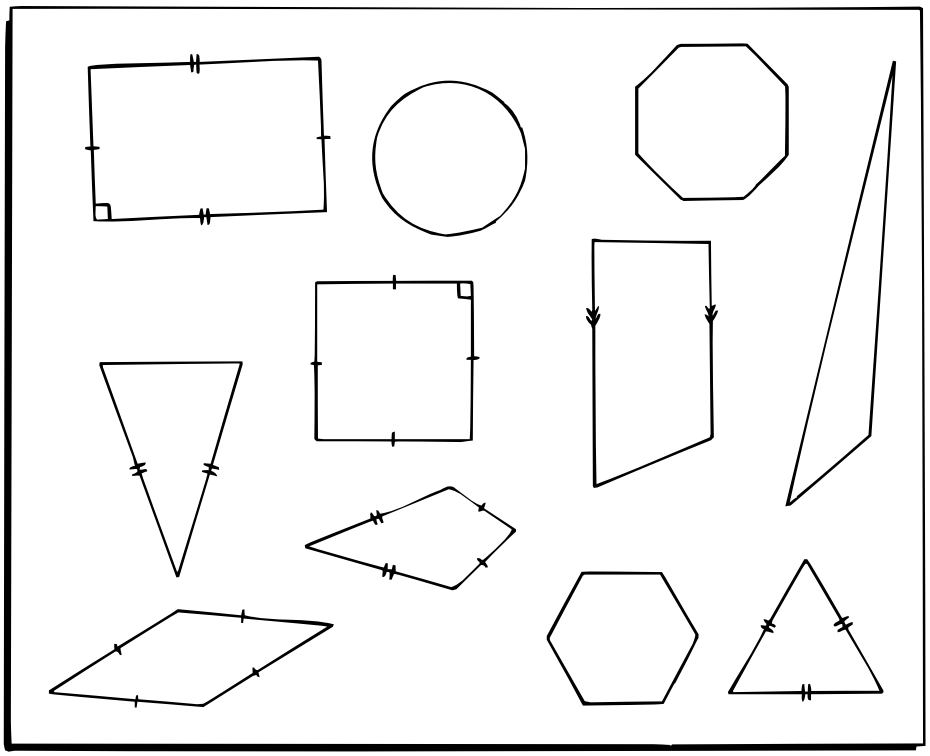
TYPES OF QUADRILATERAL!

Quadrilateral		A four sided figure
Square		All sides equal in length 4 right angles
Rectangle		LP = MN LM = PN 4 right angles
Parallelogram		RS = VT RV = ST RS is parallel to VT RV is parallel to ST
Rhombus		All sides equal in length. WX is parallel to ZY WZ is parallel to XY
Trapezium		DE is parallel to GF
Kite		JK = KL JM = LM

LEARN THESE FACTS!

-NAME THE SHAPES!

-CHOOSE FROM THIS LIST



equilateral triangle

hexagon

octagon

square

isosceles triangle

trapezium

rectangle

rhombus

circle

kite

scalene triangle

Choose six of the shapes and give an example from your classroom of what each shape is used for.

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

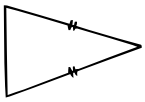
POLYGONS

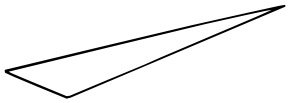
- FILL IN THE POLYGON NAMES AND FEATURES.!

TRIANGLE

NUMBER OF SIDES

EQUILATERAL TRIANGLE HAS 3 EQUAL SIDES & ANGLES

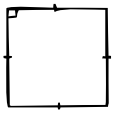


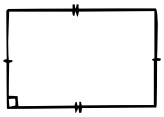


DRAW YOUR OWN TRIANGLE

QUADRILATERAL

NUMBER OF SIDES

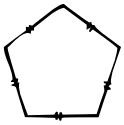




DRAW YOUR OWN QUADRILATERAL

P_ _ _ _ _ _ _

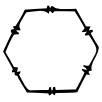
NUMBER OF SIDES



DRAW YOUR OWN PENTAGON

H_ _ _ _ _ _

NUMBER OF SIDES

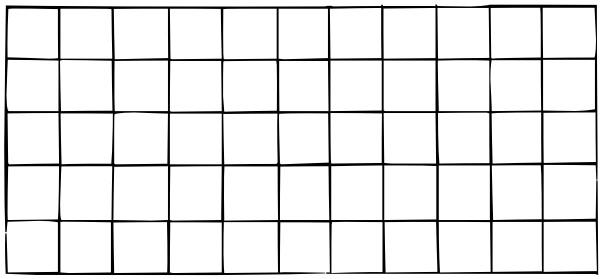


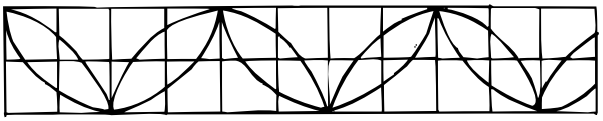
DRAW YOUR OWN HEXAGON

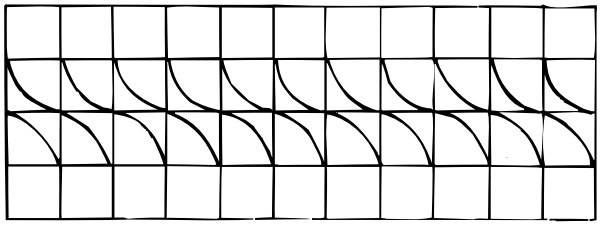
TESSELATIONS

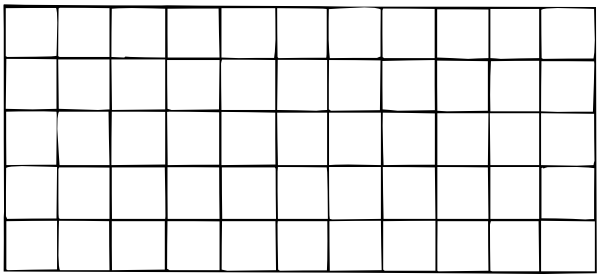
Tessellations are found on wallpaper and on floor lino. It is when a pattern is repeated a number of times. On the next few pages are some grids. Design a tessellation pattern on each. Have a competition with the rest of your class. Get your teacher to choose who has designed the best.

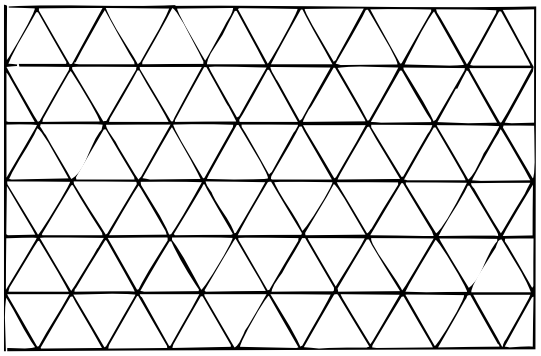
HERE ARE SOME EXAMPLES TO START YOU OFF!

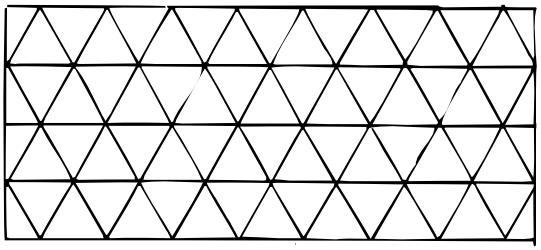


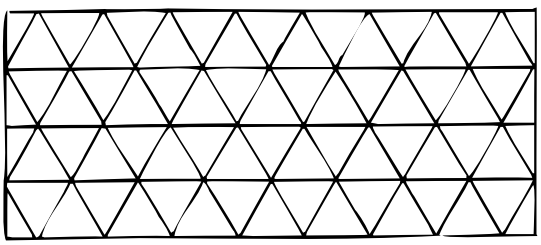


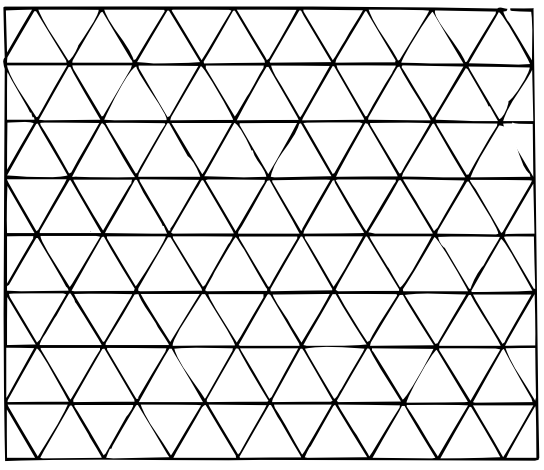




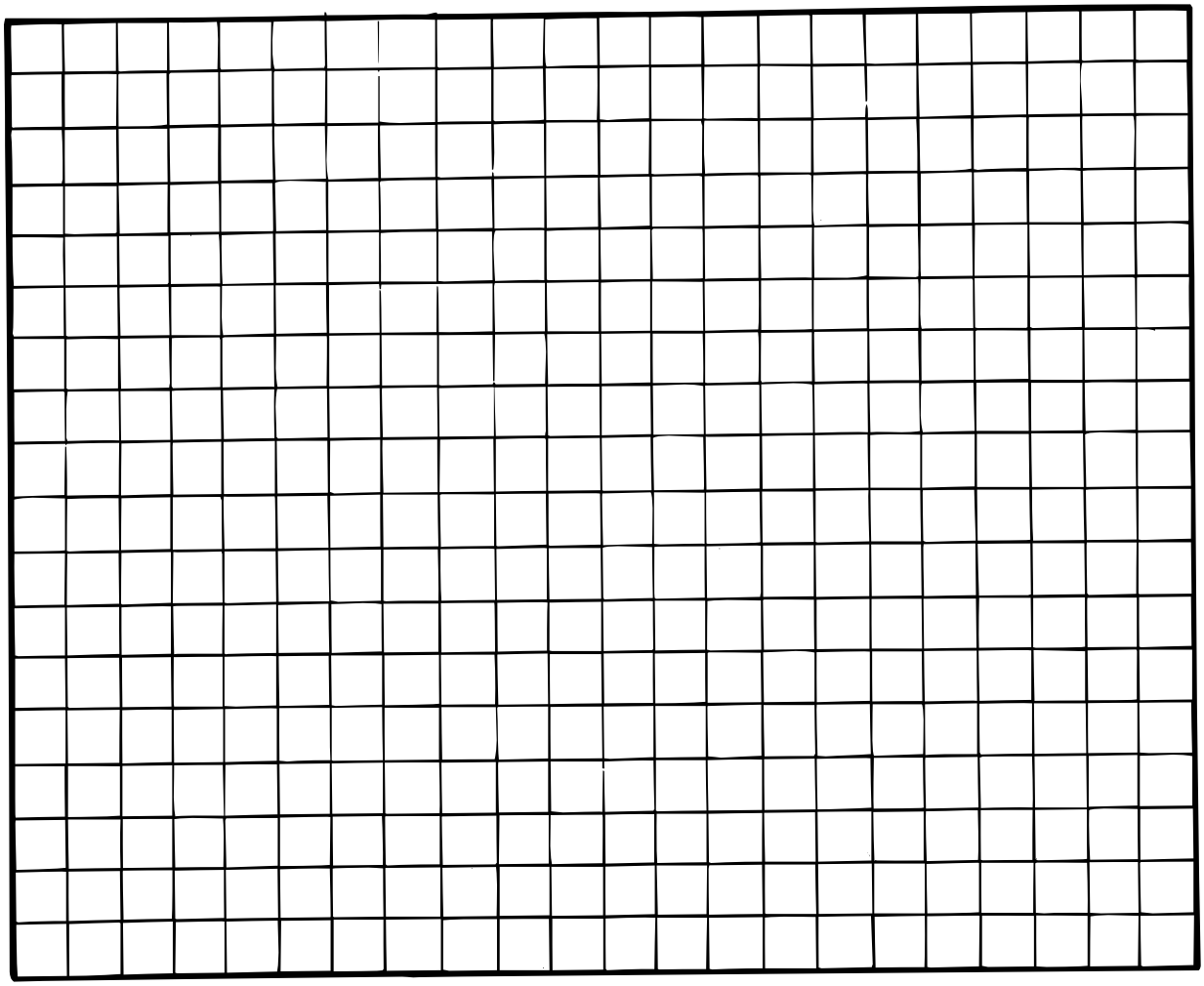


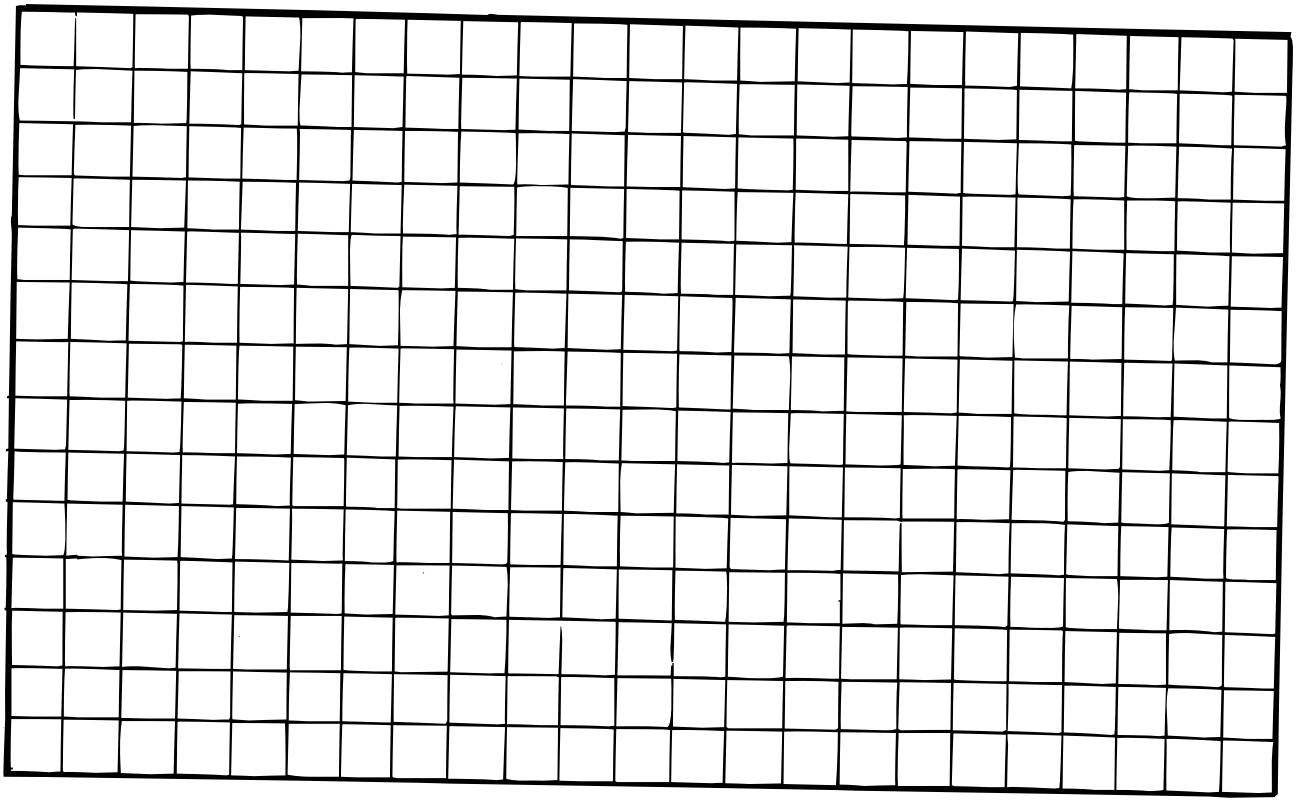




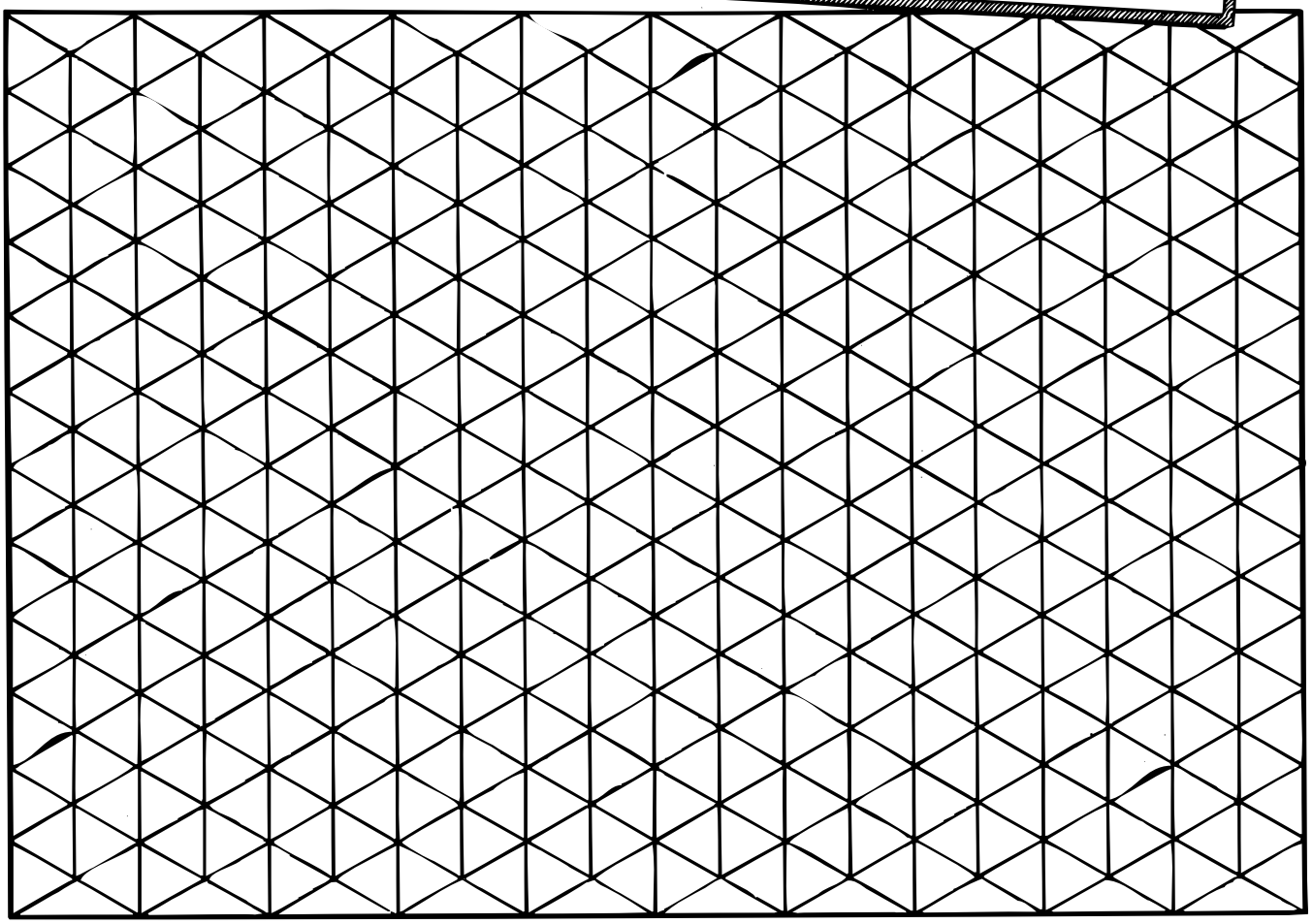


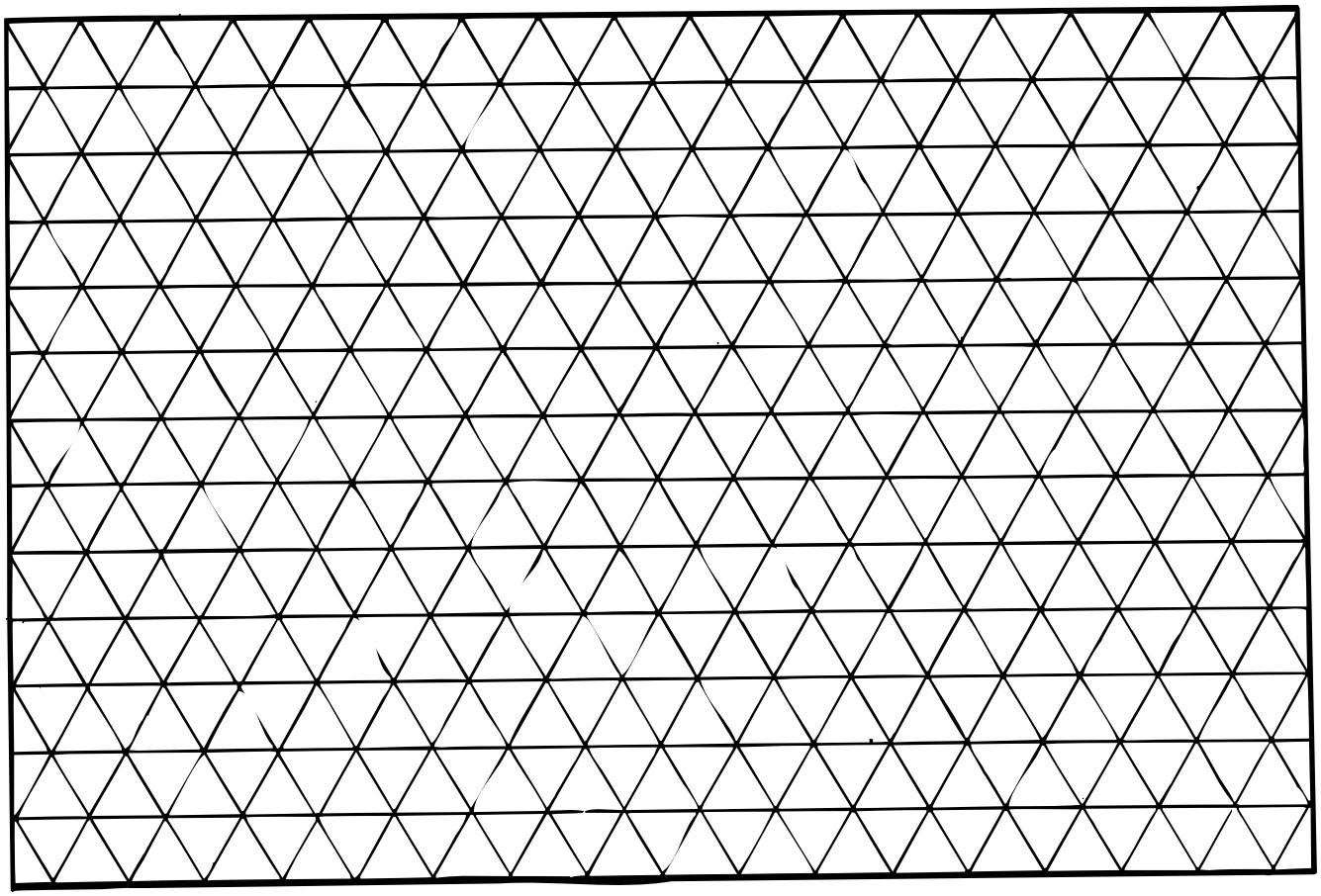
-NOW DESIGN SOME **TESSELATIONS** OF YOUR OWN ON THESE TWO PAGES!





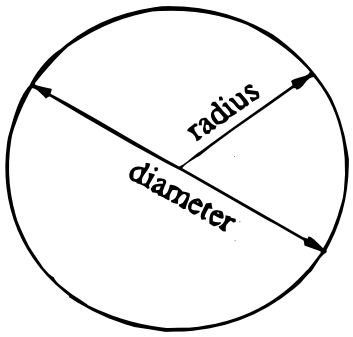
TESSELATIONS

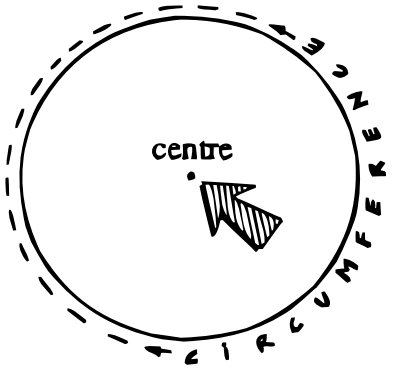


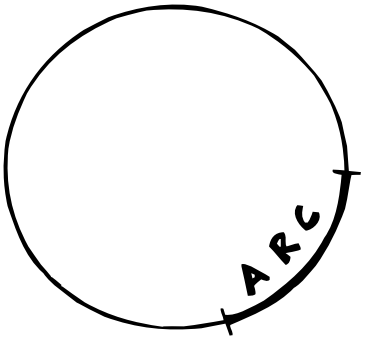


CIRCLE DEFINITIONS

Here are all the names of special parts of a circle.
Learn them and answer the questions later on.

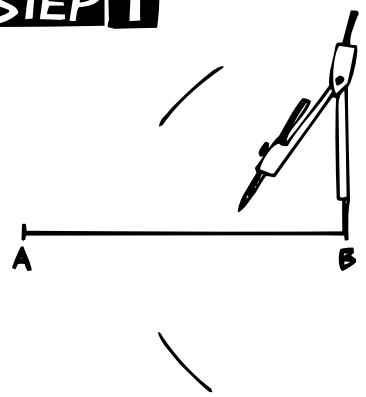






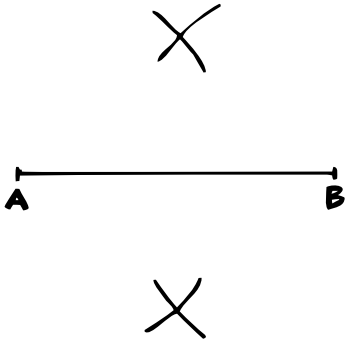
HOW DO YOU BISECT A LINE? (BISECT MEANS CUT IN HALF.)

STEP 1



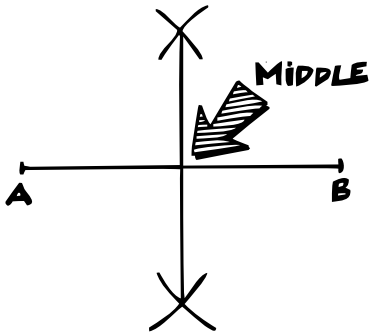
Put the compass on the end of the line and draw two arcs.

STEP 2



Repeat at the other end.

STEP 3



Now join the two points made. Where the two lines meet is the middle of line $\overline{AB}$

Use your ruler to draw lines of these lengths, then use your compass to bisect (find the middle) of each line.

1. 80mm
2. 60mm
3. 100mm
4. 75mm
5. 30mm
6. 91mm

CIRCLE DEFINITIONS

- CAN YOU REMEMBER, OR DO YOU NEED TO LOOK BACK?

1. Using the centre given draw a circle with a radius of 30mm.

centre

2. How big is the diameter ? _____

3. How could you measure the circumference of a circle ?

_____

4. How big is the circumference of your circle ? _____

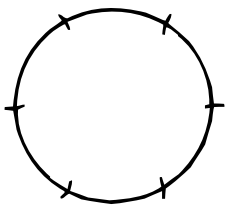
5. Using the centre given draw a circle with a radius of 40mm.

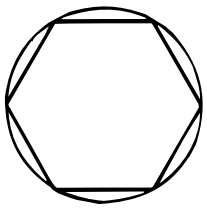
6. How big is the diameter ? _____

7. Use the radius to step around the circumference.

8. Join each point.

centre

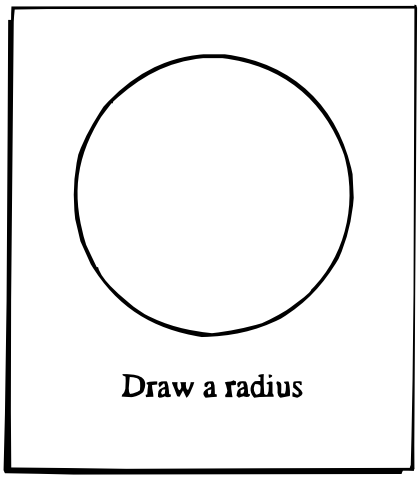




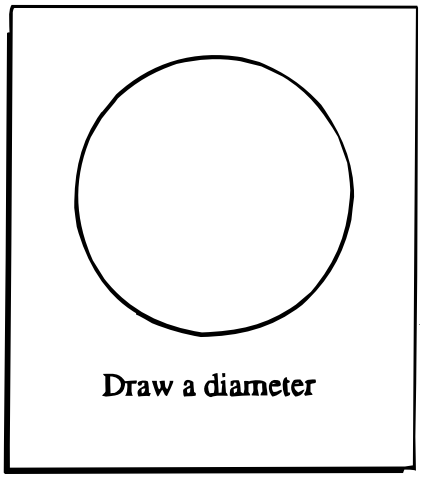
9. You should have a polygon with _____ sides.

10. What is the name of the polygon you have made ? _____

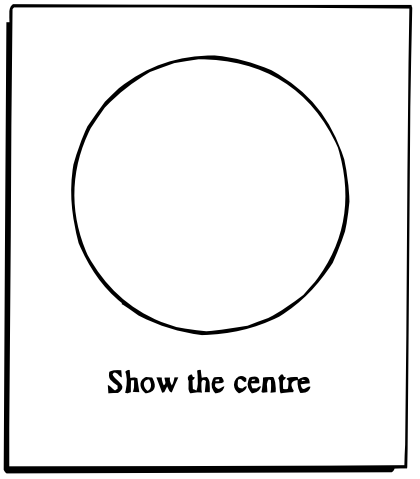
—DO YOU REMEMBER THIS?



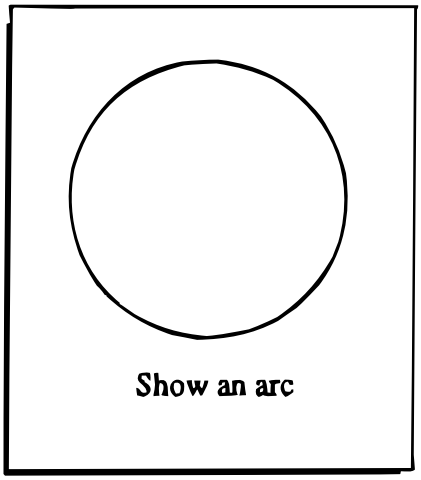
Draw a radius



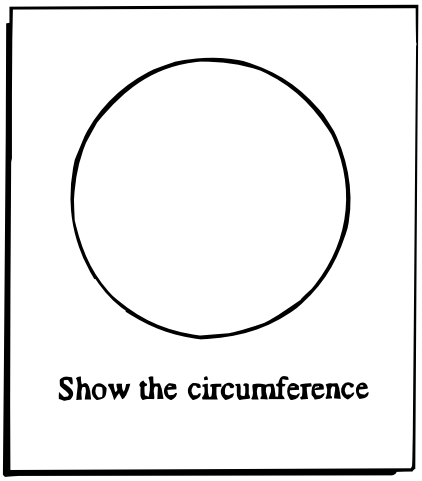
Draw a diameter



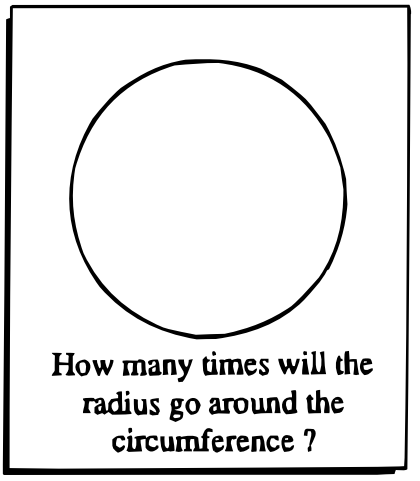
Show the centre



Show an arc

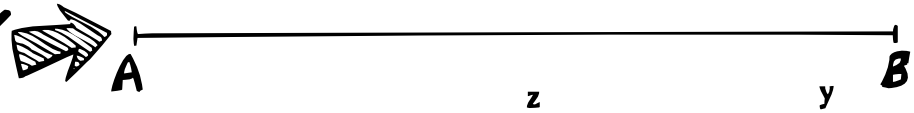


Show the circumference

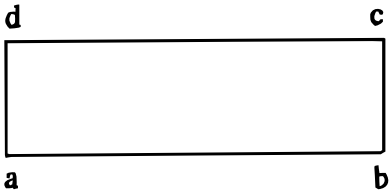


How many times will the radius go around the circumference ?

—MEASURE LINE $\overline{AB}$ USING A COMPASS, BISECT LINE $\overline{AB}$!



— NOW MEASURE THE SIDES OF THESE SHAPES AND ANSWER THE QUESTIONS BELOW!



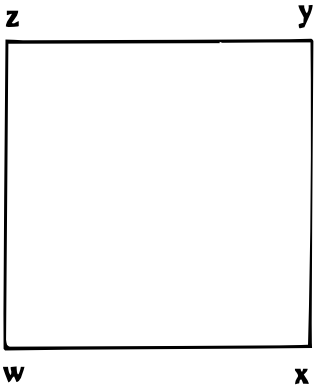
ab = _____ cd = _____

bc = _____ da = _____

What is this shape called ? _____

What is the perimeter ? _____

What is the area ? _____



wx = _____ yz = _____

xy = _____ zw = _____

What is this shape called ? _____

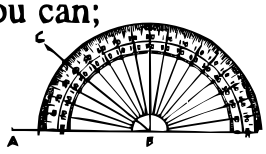
What is the perimeter ? _____

What is the area ? _____

BISECTING AN ANGLE!

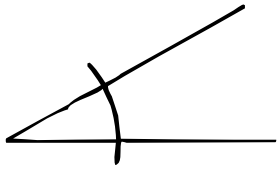
What does bisect mean ? _____

To bisect an angle you can;

1 Use a protractor  OR 2 Use a compass and ruler

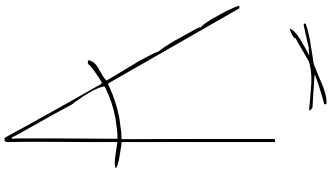
STEP 1

Put the compass at the vertex of the angle and draw an arc.



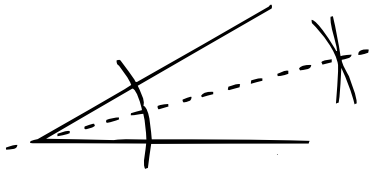
STEP 2

Where your arc cuts the angle, draw 2 more arcs.



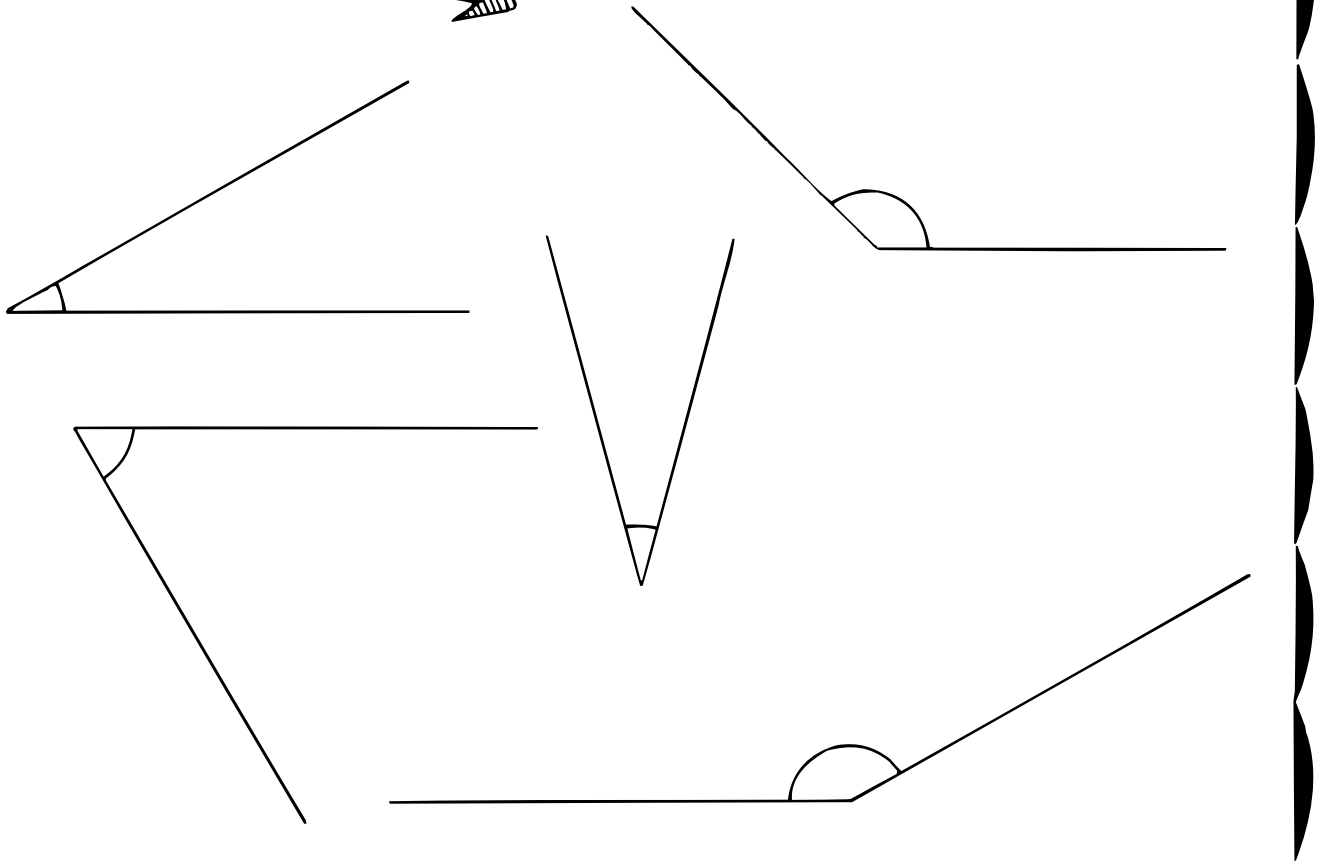
STEP 3

Join the points.



CONGRATULATIONS, you have bisected an angle.

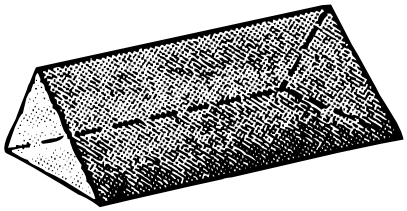
Now bisect these angles



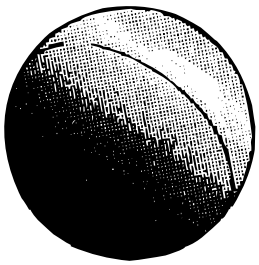
FILL OUT THIS TABLE!

Use the solids you have made.

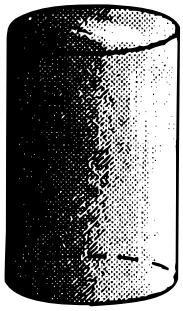
SOLID	NUMBER OF FACES	NUMBER OF EDGES	NUMBER OF VERTICES
CUBE			
TETRAHEDRON			
OCTAHEDRON			
PYRAMID			



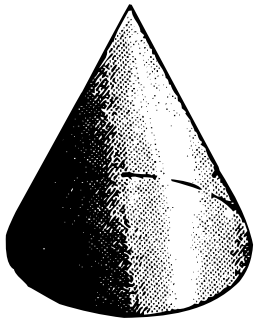
1 _____



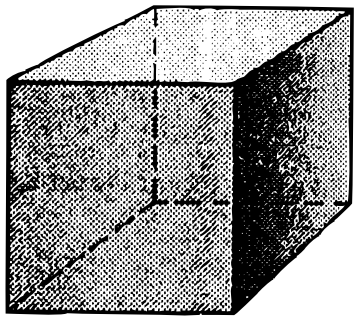
2 _____



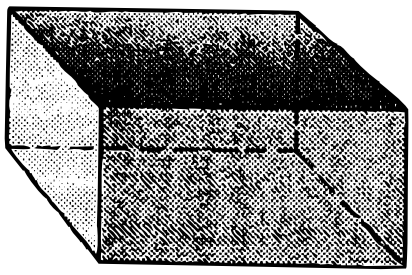
3 _____



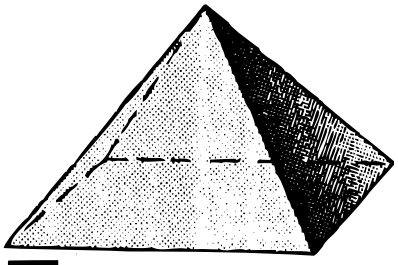
4 _____



5 _____



6 _____



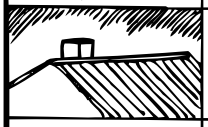
7 _____

Name all the solids above from this list

cube pyramid sphere
cylinder triangular prism
rectangular prism cone

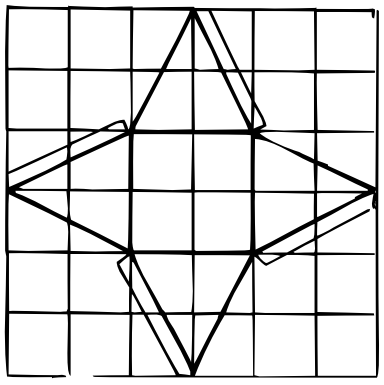
SOLIDS

➡ Write the name of the solid which is most like :

	A lump of sugar	
	A piece of chalk	
	A brick	
	A house roof	
	A funnel	
	A biscuit tin	
	A tennis ball	

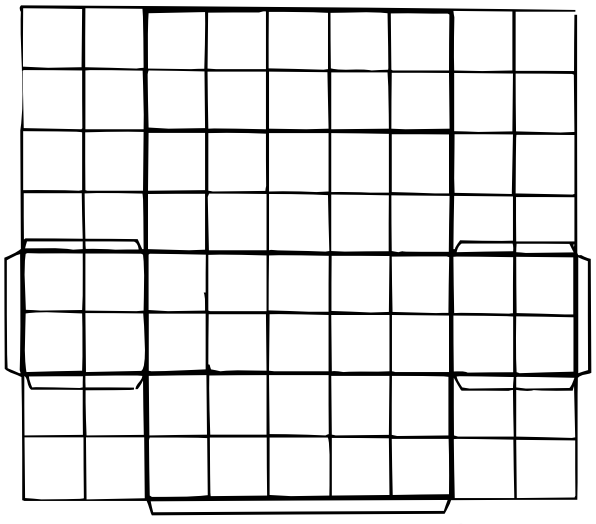
NOW MAKE A CHINESE LANTERN!

Draw up these shapes using 5cm squares



You need two of these

and one of these

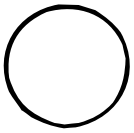


Using 2 pyramids and a rectangular prism, make a chinese lantern.

FUN WITH CIRCLES 1

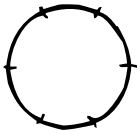
STEP 1

Draw a circle with radius 50mm.



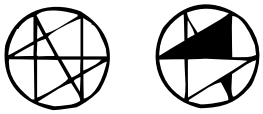
STEP 2

Use the radius to mark around the circumference.



STEP 3

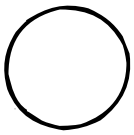
Draw the shape shown.



Use pencil and rub out any unwanted lines.

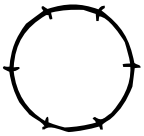
STEP 1

Draw another circle with radius 50mm.



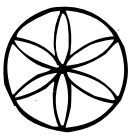
STEP 2

Use this radius to mark around the circumference.



STEP 3

Draw arcs using each of your marks as a centre point.



— COLOUR YOUR DESIGN!

-FUN WITH CIRCLES 2

STEP 1

Measure the radius of one of the circles below.

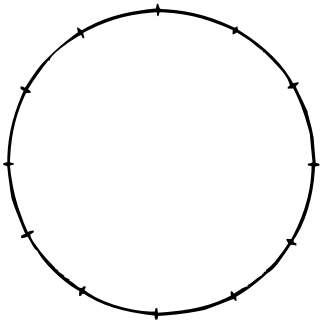
radius = _____

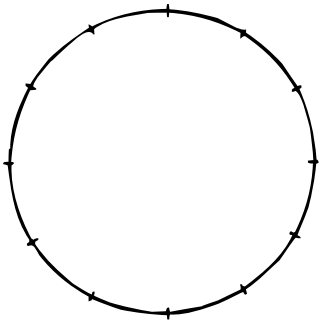
STEP 2

Use this radius to draw new circles. Use each point marked on the circumference as a centre. Do this for both circles.

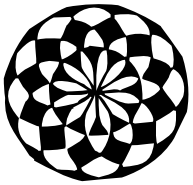
STEP 3

-NOW COLOUR YOUR DESIGNS.





-HERE IS ONE EXAMPLE. TRY TO MAKE EACH DESIGN DIFFERENT!



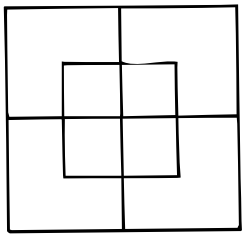
-FUN WITH CIRCLES 3

STEP 1

Below are two squares.
Measure each side

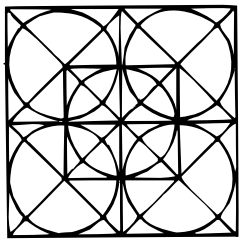
_____ mm

Divide it into 5 smaller squares, one at the centre.



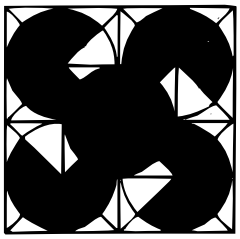
STEP 2

Draw diagonals across each square.
Use the point where they cross as the centre for a circle.



STEP 3

– COLOUR YOUR DESIGN!

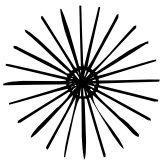


TRY TO MAKE EACH DESIGN DIFFERENT!

-FUN WITH CIRCLES 4

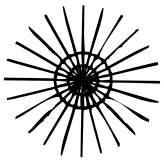
STEP 1

Using the pattern below, draw a circle with radius 5 mm.



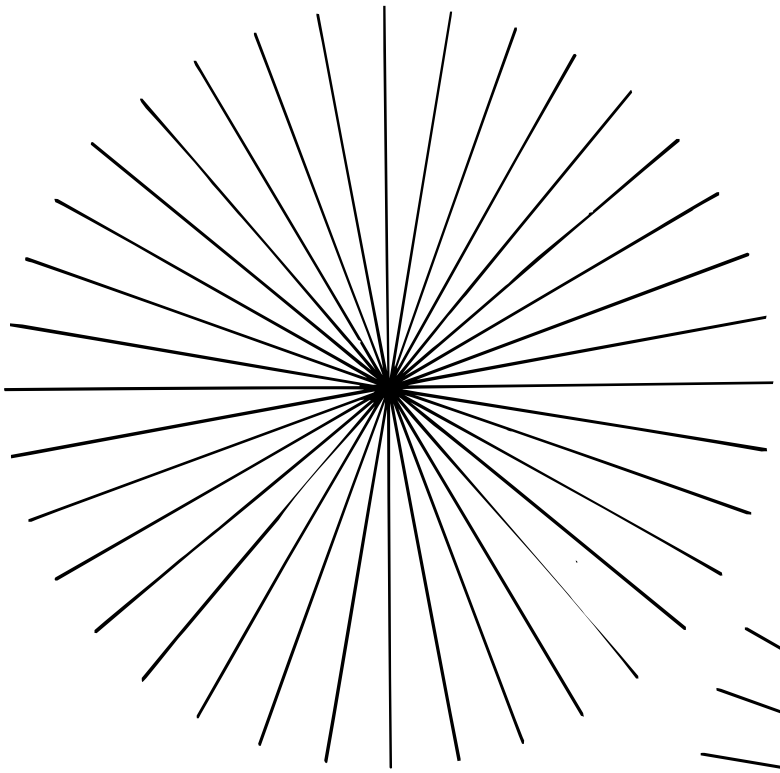
STEP 2

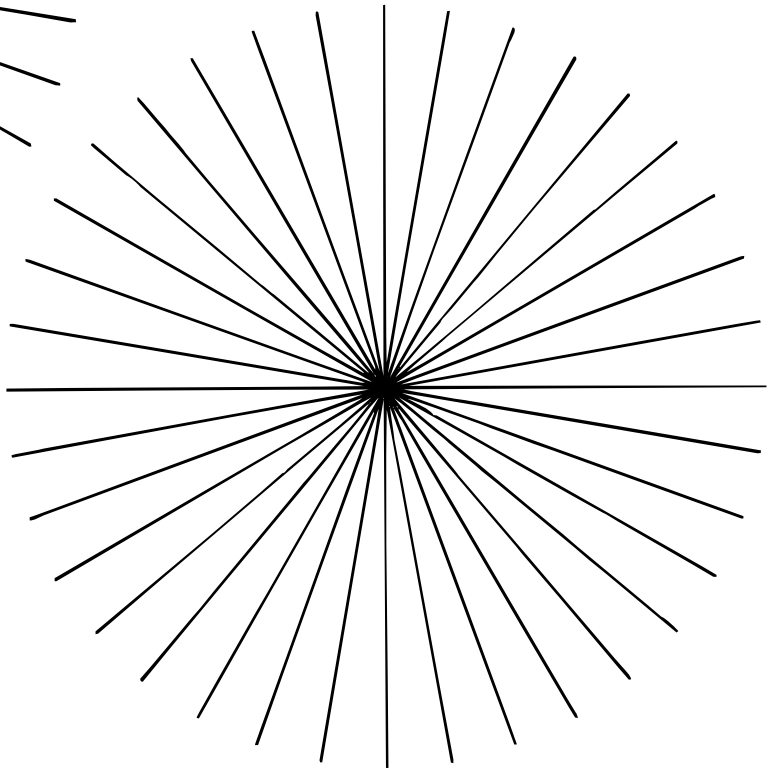
Using the same centre draw another circle with radius 10mm.



STEP 3

Continue drawing circles 5mm apart until you have 10 circles.



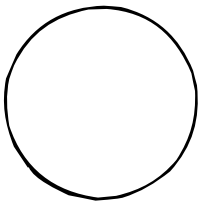


-NOW COLOUR YOUR DESIGNS.
TRY TO MAKE EACH DESIGN DIFFERENT!

-FUN WITH CIRCLES 5

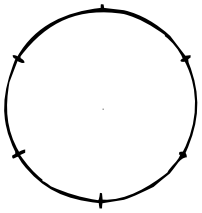
STEP 1

Draw a circle with radius 40mm



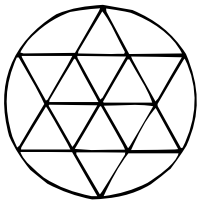
STEP 2

Use the radius to mark around the circumference



STEP 3

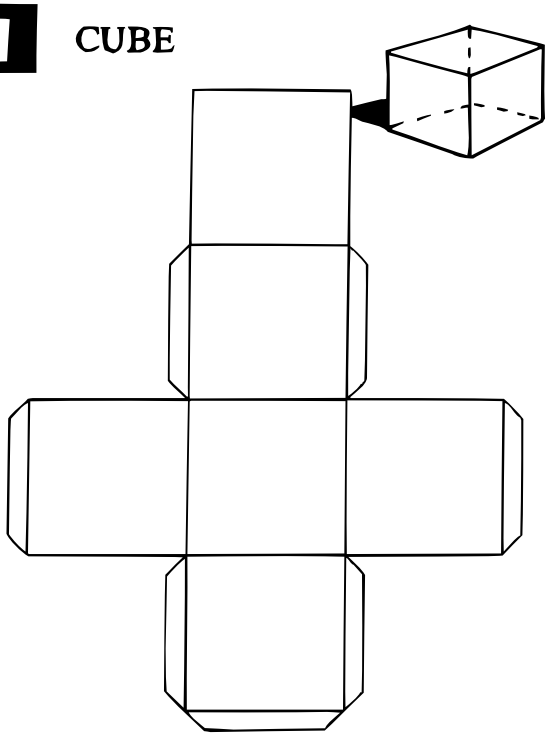
Join the points as shown.



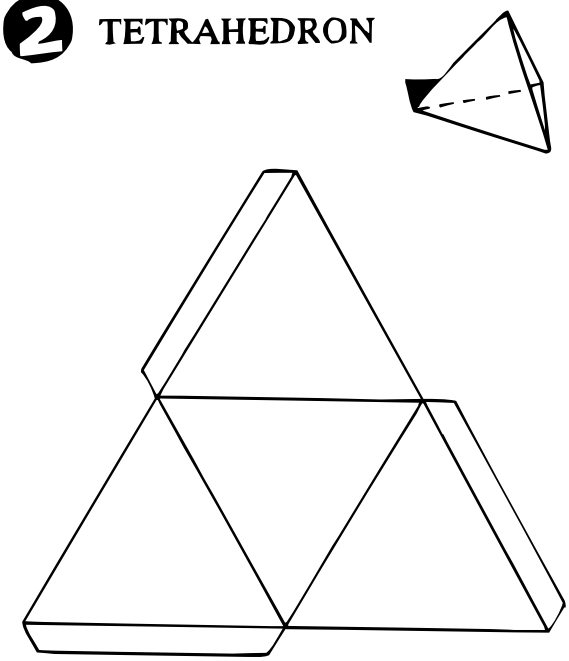
-NOW COLOUR YOUR DESIGNS.
TRY TO MAKE EACH DESIGN DIFFERENT.

Draw these solid nets onto a piece of cardboard. Cut them out, fold and tape them up. Now colour and hang them from the ceiling

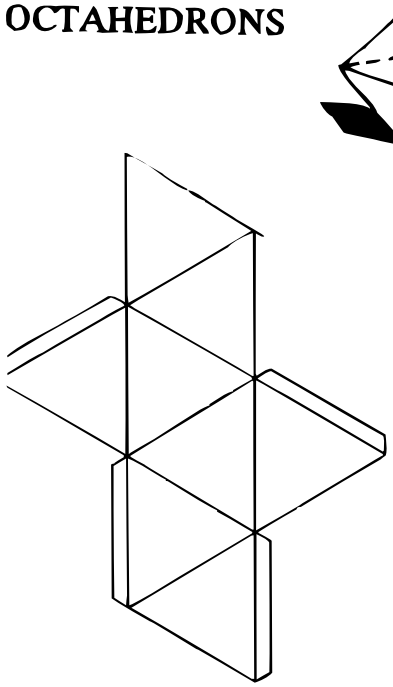
1 CUBE



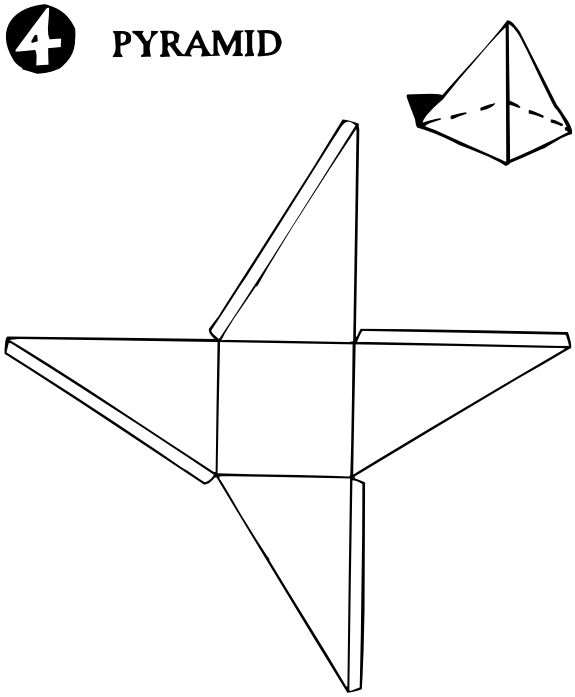
2 TETRAHEDRON



3 OCTAHEDRONS

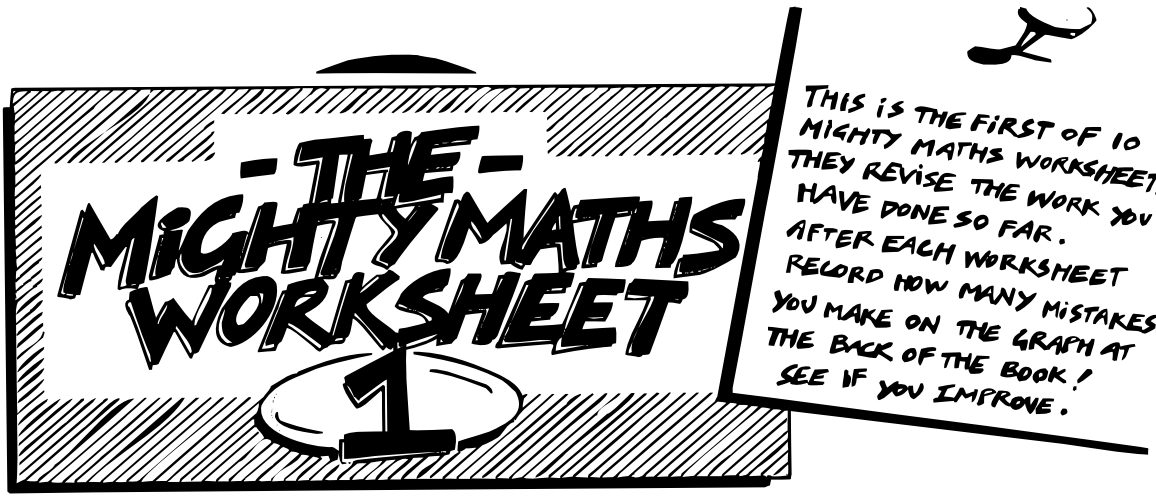


4 PYRAMID



-DESIGN A NET OF YOUR OWN!

(ASK YOUR TEACHER FOR SOME IDEAS.)



Write a number sentence for each of these.

1. The sum of 16 and 8 is 24. .....
2. The difference between 25 and 16 is 9. .....
3. 507 is greater than 229 .....
4. The product of 16 and 4 is 64. .....

Write a sentence for these.

1. $3 + 7 + 10 = 20$ .....
2. $24 \div 6 = 4$ .....
3. $8 < 15$ .....

Circle any sentences that equal 30.

$(6 \times 7) - 12$

$50 - (5 \times 3)$

$22 + (8 \div 4)$

$9 + 15 + 6$

Circle the answer which contains the largest number.

$234 + 16$

$417 - 84$

89×4

$636 \div 3$

84	27	4793	533	522	5378
72	542	8217	− 425	− 83	− 639
50	661	744			
39	50	+ 35			
97	775		4137	412	416
+ 66	+ 258		− 6	× 4	× 8

Find the next three numbers.

5, 10, 15, ... , ... , ...

15, 30, 45, ... , ... , ...

64, 60, 56, ... , ... , ...

100, 90, 80, ... , ... , ...

-THIS IS A...
...MAGIC SQUARE

3	10	5
8	6	4
7	2	9

Add each row. .....

Add each column. .....

Add the two diagonals. .....

Why is it magic ? .....

.....

Complete these magic squares.

12	5	10
8		

4	9	2
		7

1 What is today's date ?

Day Month Year

.....

2 What will the date be on Saturday ?

.....

3 What was the date last Tuesday ?

.....

4 True or False ; $4 \times 9 = 9 + 9 + 9 + 9$

.....

5 What is the cost of 15 eggs at 90c each ?

.....

6 You spend 50c and have $4.30 left.
How much did you start off with ?

.....

7 Find the missing number.

$400 + \square + 7 = 497$

8 A family set out in the car to travel 500 km.
In the morning they travel 150 km, and in the afternoon they travel 220 km.
How far have they gone ?

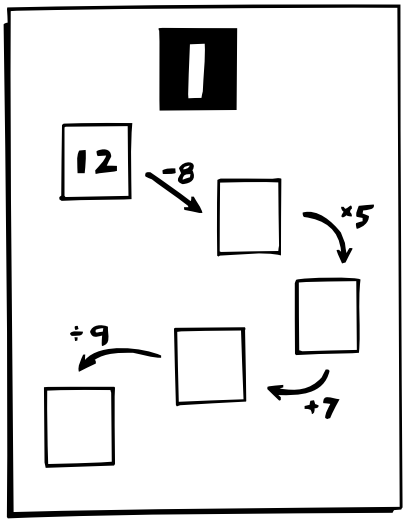
.....

How far have they left to go ?

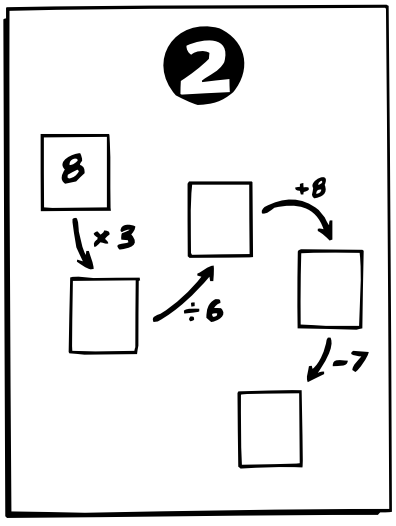
.....

Find the missing numbers.

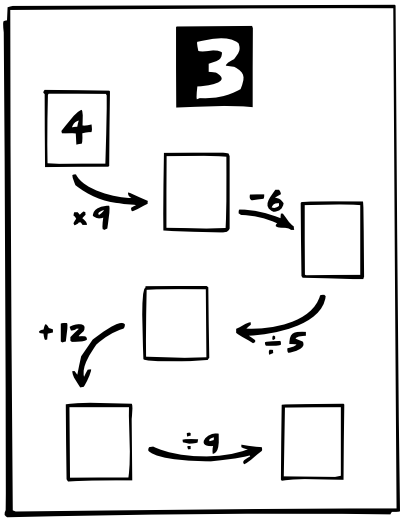
1



2



3



Number of mistakes. _____

THE MIGHTY MATHS WORKSHEET 2

9	7	4	8	5	7	6	3	5	9
× 4	× 8	× 7	× 2	× 6	× 7	× 3	× 5	× 9	× 6
___	___	___	___	___	___	___	___	___	___

1. Write the number 10 more than 326 .....
2. Write the number 50 less than 200 .....
3. You buy 3 stamps at 50c each.
   How much does it cost ? .....
4. You pay for the stamps with a $5 note.
   How much do you have left ? .....
5. What colour is the five dollar note ? .....
6. A cake is divided into 10 slices.
   You eat 7 slices. What fraction of the cake is left ? .....

Add 5 to each of these numbers and then add all your answers.

1 + 5	9 + 5	17 + 5	25 + 5	33 + 5	41 + 5	TOTAL
	+	+	+	+	+	=

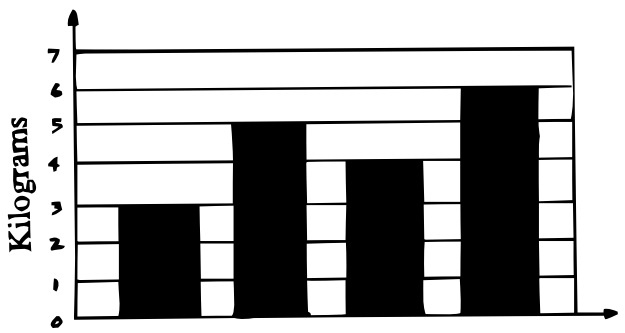
Write down these numbers and add them.

1	2
seven, twelve sixteen, thirty-three	Forty five, seventy three sixty eight

- COMPLETE THIS SUBTRACTION TABLE.

−	27	24	16	10
9				
5				
3				
7				

I. N. Stein school had a recycling drive and collected tin cans.



Which room collected the most ? .....

Which room collected the least ? .....

Which room collected 5kg of tin ? .....

How much did room 12 collect ? .....

How many kg were collected all together ? .....

FINISH THESE MAGIC SQUARES

3	8	7
10		2

		8
2	9	4

16	2		
	11	10	8
9	7		12
	14		

1 How many days in a week ?

.....

2 How many days in April ?

.....

3 What is the date on Saturday ?

.....

4 What is the time now ?

.....

5 How many minutes between 10 and 12 o'clock ?

.....

6 How many sides has a brick ?

.....

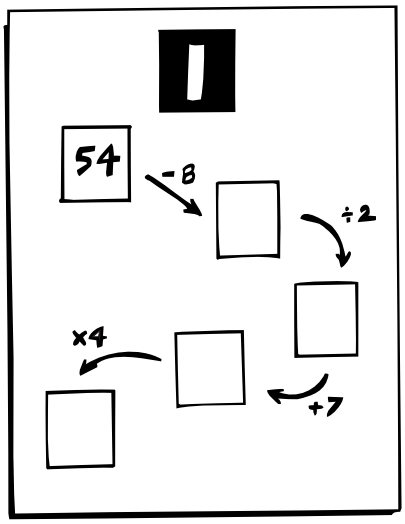
Complete these tables.

You should find a pattern.

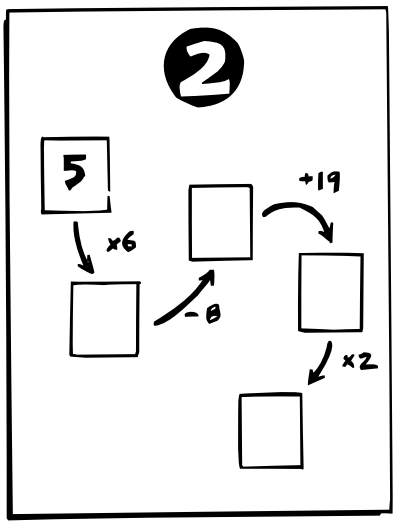
3 × 37 = ___	7 × 143 = ___
6 × 37 = ___	14 × 143 = ___
9 × 37 = ___	21 × 143 = ___
12 × 37 = ___	28 × 143 = ___
15 × 37 = ___	35 × 143 = ___
18 × 37 = ___	42 × 143 = ___
21 × 37 = ___	49 × 143 = ___
24 × 37 = ___	56 × 143 = ___
27 × 37 = ___	63 × 143 = ___

Find the missing numbers.

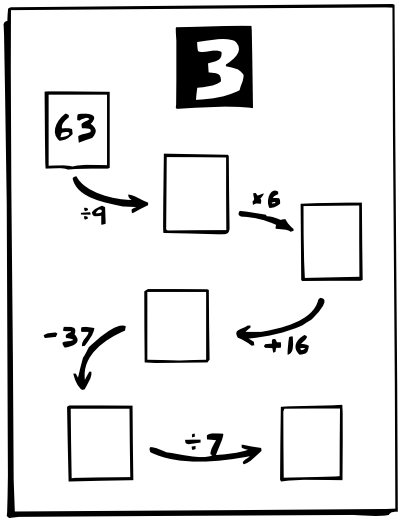
1



2



3



Number of mistakes. _____

THE MIGHTY MATHS WORKSHEET 3

TRY THESE

662 − 584	47 + 82 + 16 + 53 + 38 + 44	162 + 756 + 343 + 662	4122 + 6584 + 1279 + 5358	262 − 181 = 54 × 6	417 − 239 = 326 × 7
		$7\overline{)3794}$	$24\overline{)1560}$		

Jim earns $450 per week.

His expenses for the week are:

Bus fares	$25
Food	$90
Rent	$80
Other	$ 100

1. How much does he spend ?

   .....

2. How much can he save ?

   .....

What number is fifteen less than twenty seven ? .....

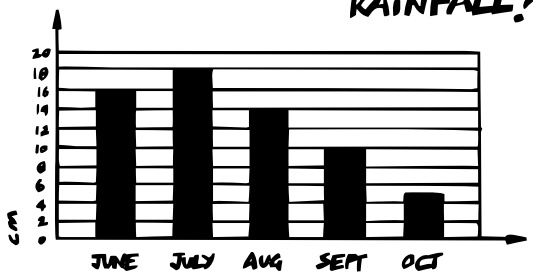
A pie is divided into 8 pieces.

Seven pieces are eaten.

What fraction of the pie is left ?

.....

RAINVILLE - AVERAGE MONTHLY RAINFALL!



Fill out the table

Month	Rainfall

Which month is the wettest ? .....

Which month is the driest ? .....

Which month has 10cm of rain ? .....

How many cm of rain falls in June ? .....

How many cm of rain falls between June and October ? .....

FINISH THESE ADDITION SQUARES

+				
	10		6	
			11	
9		14		12
	9	6		

+	4			
8		9		
		7	12	
			15	12
				5

1. Write down all the odd numbers between 10 and 35. _____

2. What colour is a ten dollar note ?

3. Which is bigger - a 50c or $2 coin ?

4. How many months start with the letter J ?

   Name these. _____

5. Write 547 in words.

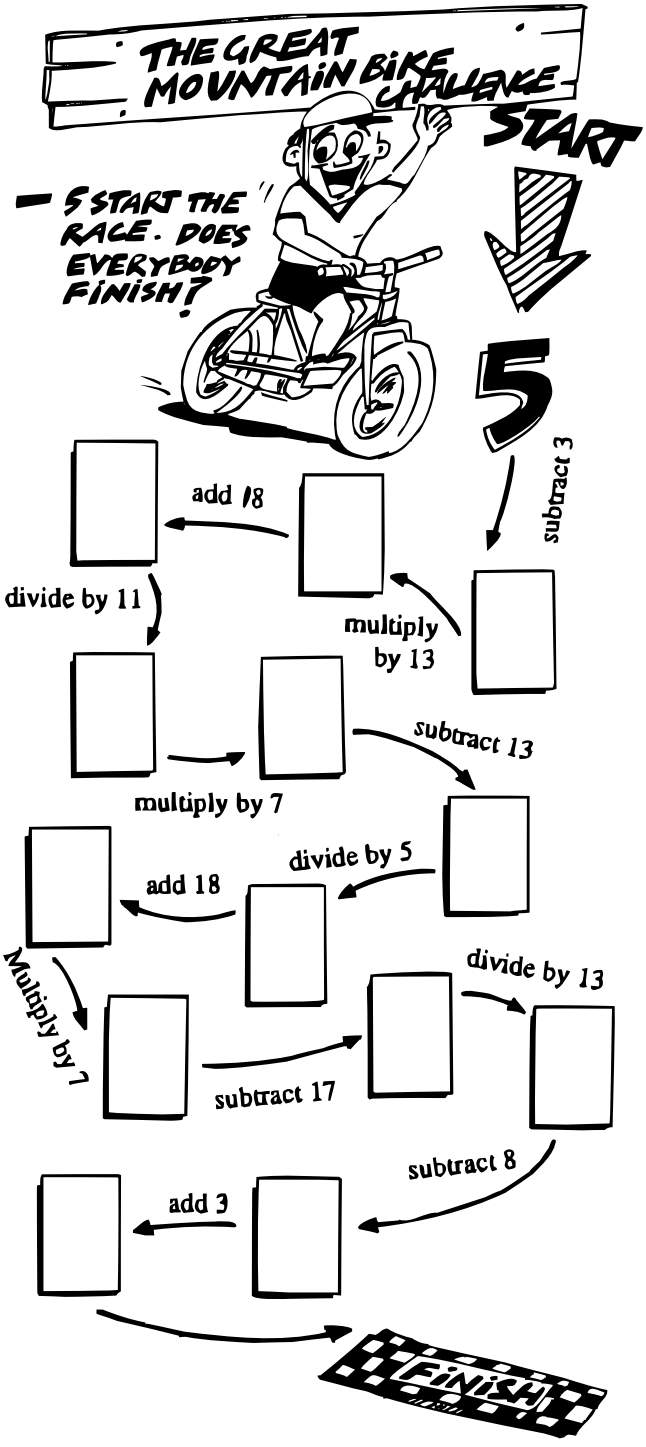
6. What is thirty two times five ?

7. You buy 4 birthday cards costing ; $1, $1.50, $1, $1.75

   How much does it cost? _____

   You pay with a $10 note.
   How much change do you get ?

8. How many even numbers between 0 and 20 ?



THE MIGHTY MATHS WORKSHEET 4

TRY THESE

What is $\frac{1}{2}$ of 3 000 ? _____

Write the number five thousand eight hundred and six with numerals.

_____

$10 \times 54 =$ ____ $9 \times 30 =$ ____ $100 \times 8 =$ ____ $4\overline{)944}$ $5\overline{)5165}$

$400 \times 7 =$ ____ $20 \times 20 =$ ____ $35 \times 15 =$ ____ $7\overline{)2387}$ $6\overline{)2274}$

Circle the number that is nearest to 7 x 99

700 800 750 650 850

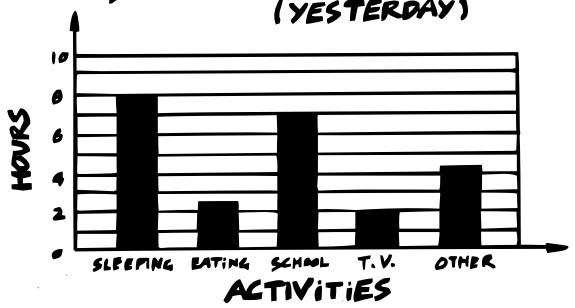
Circle the sentence that is the largest.

428 + 7 400 - 8 320 × 3 455 ÷ 5

BUS TIMETABLE

TIME NOW	NEXT BUS DUE	TIME YOU MUST WAIT
1:40	1:45	
2:15	2:30	
3:32	3:45	
5:46	6:00	
7:17	7:45	

BEVERLY'S DAY (YESTERDAY)



What did she do for the longest time ? _____

How long did she eat for ? _____

What did she spend 7 hours doing ? _____

Give two activities she could have done during this time. _____

_____

How many hours are in Beverly's day ? ____

-FINISH THESE MULTIPLICATION SQUARES

X	5			
3		27		
		54	12	
			16	64
				72

X	5		4	
	25			
12		96		72
			12	
9				

1 What is the value of 8 in the number 68 532 ?

_____

2 What number is 15 more than 75 ?

_____

3 What number added to 12 gives 37 ?

_____

4 The teacher gives 5 pupils 3 sheets of cardboard each.
How many sheets were given out ?

_____

5 You plant 4 rows of tomatoes with 7 plants in each row. How many tomato plants do you have ? _____

6 Each tomato plant costed 40c.
How much did you spend ? _____

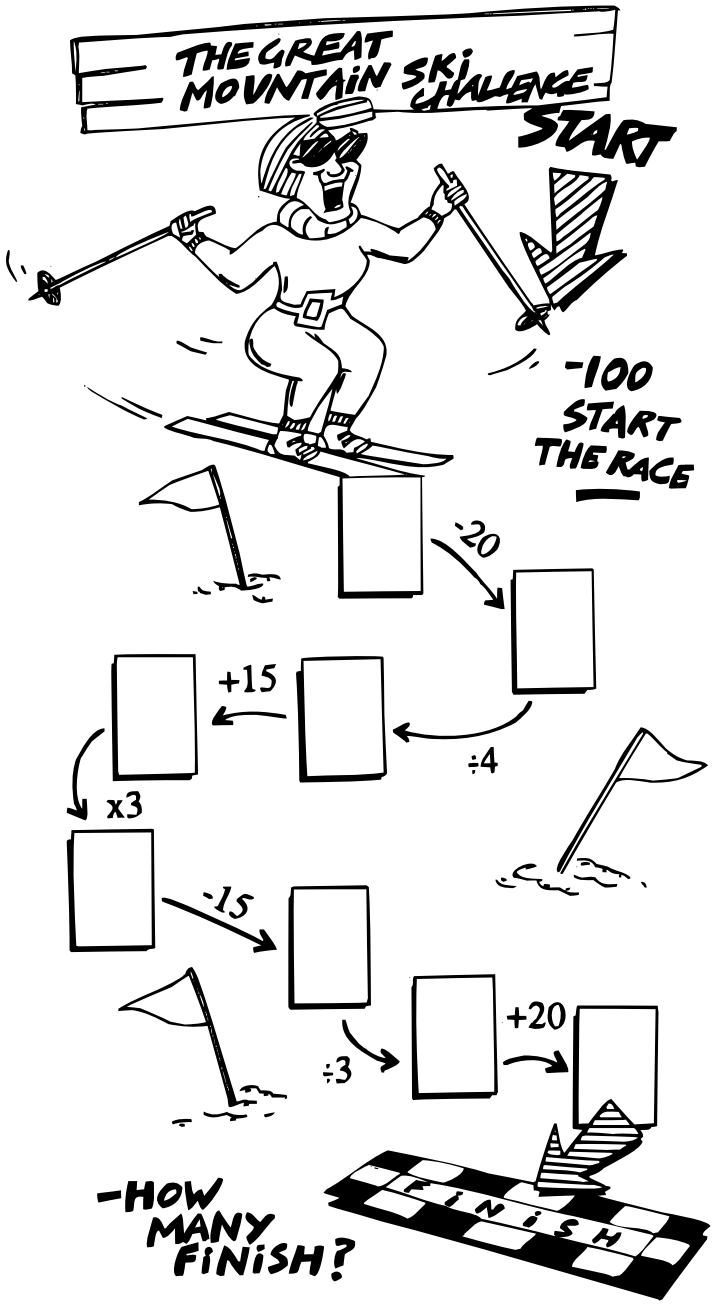
7 You managed to collect 168 tomatoes.
How many tomatoes is that per plant ?

_____

8 You give away 50% of your tomatoes.
How many tomatoes is this ?

_____

_____



Number of mistakes. _____

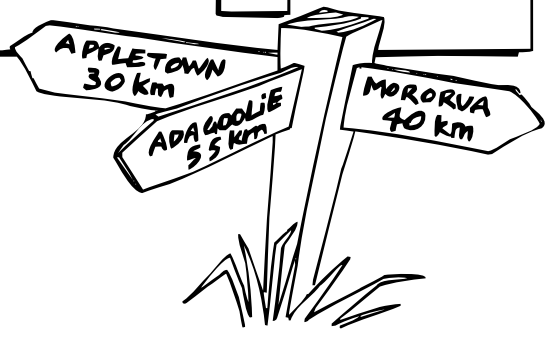
THE MIGHTY MATHS WORKSHEET 5

TRY THESE

	455 216 717 372 +641	27 42 835 666 +217	$4.15 $2.17 $3.63	627 × 5	324 × 46
4)1012				6)2142	43)9159

Fill in each box to make each sentence true.

(7 + 6) - 5 = ☐	(12 + 12) - 7 = ☐	(9 + 18) - 12 = ☐
25 - 8 = ☐	15 - 7 = ☐	35 - 18 = ☐
(3 × 5) - 10 = ☐	7 × (6 + 8) = ☐	25 - (8 + 3) = ☐
(32 ÷ 8) × 4 = ☐	(15 ÷ ☐) + 4 = 7	(9 × ☐) × 2 = 18



WHICH IS THE BIGGEST?

190 minutes or 2 hours ? _____

20 days or 3 weeks ? _____

$4 or four 50c pieces ? _____

3 days or 50 hours ? _____

7.29 or 8 ? _____

99cm or 1metre ? _____

How far is it from ;

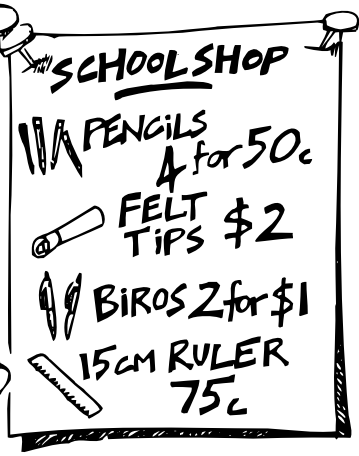
Adagoolie to Mororua ? _____

Appletown to Mororua ? _____

Adagoolie to Appletown ? _____

Circle all the sums that =16.

8 + 8	10 + 5	20 - 4
4 x 4	15 + 4	20 - 3
9 + 7	27 - 9	(½ x 20) + 6
6 x 3	12 - 4	(3 x 5) + 1



FIND THE COST OF...

8 pencils, _____

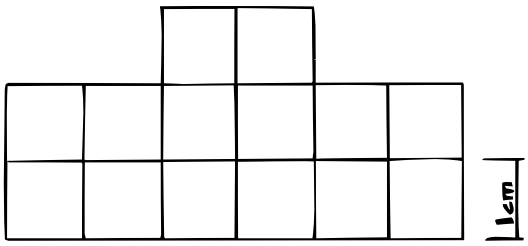
2 pens & 1 ruler, _____

3 felt tips, _____

4 pencils, 1 ruler and 1 felt tip.

_____

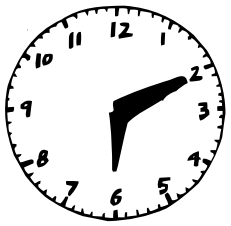
1 What is the perimeter of this shape?



What is the area of this shape?

_____

2



What is the time on this clock?

_____

How many minutes until 7 o'clock?

_____

If the time is 4pm, will it be light or dark?

_____

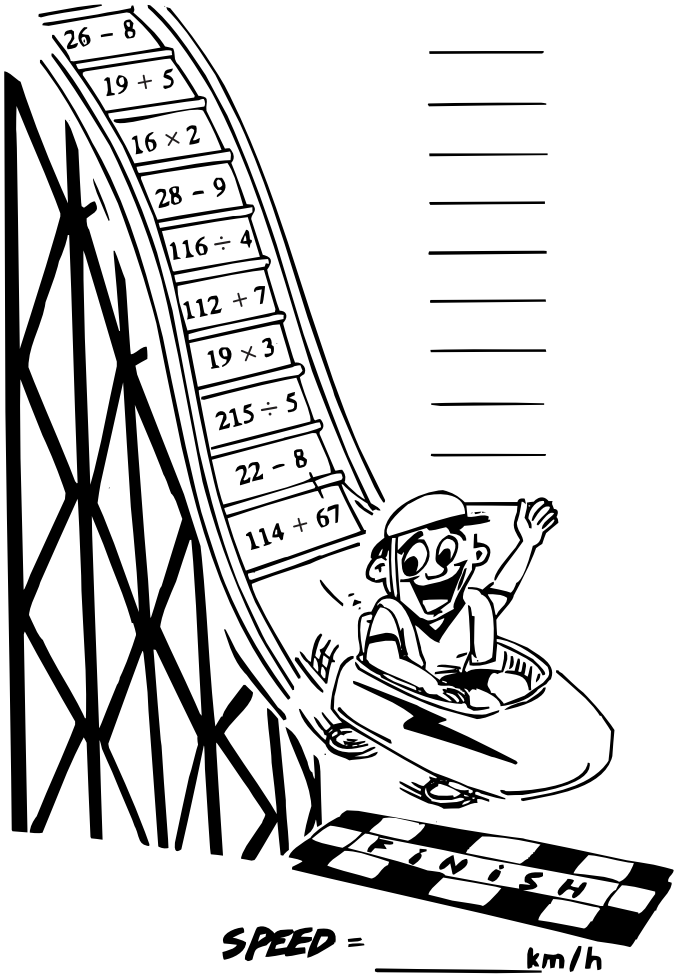
If the time is 4am, will it be light or dark?

_____

How many hours between 4pm and 4am?

THE GREAT ROLLER COASTER CHALLENGE

How fast is the Roller Coaster?
Write down all the answers to the sums.
Add up your answers

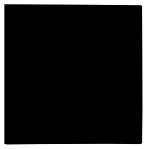


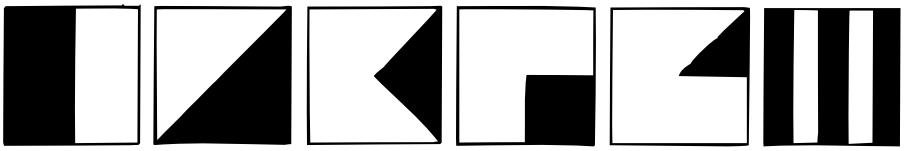
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

SPEED = _____ km/h

Number of mistakes. _____

THE MIGHTY MATHS WORKSHEET 6

IF  = 20 FIND THE VALUE OF:



____ ____ ____ ____ ____ ____

15 + 19 = ____	27 × 3 = ____	30 ÷ 5 = ____	39 ÷ 3 = ____	54 - 27 = ____
13 + 17 = ____	8 × 19 = ____	24 - 17 = ____	35 × 6 = ____	18 ÷ 6 = ____
14 - 8 = ____	54 ÷ 6 = ____	84 ÷ 4 = ____	16 × 3 = ____	49 ÷ 7 = ____
27 + 35 = ____	10 × 40 = ____	35 + 42 = ____	25 - 6 = ____	12 × 12 = ____

Subtract 8 from 20 _____

Share $40 between 5 _____

Write four hundred & six _____

Total of 8, 5 & 7 _____

At noon its ..... o'clock

mm represents _____

33 added to 9 _____

3 tens _____

Four squared _____

Double six, and add four _____

The radius is 7cm, the diameter is _____

The _____ is the distance right around the circle

Half of 50 _____

Half of 50 plus 17 _____

A rectangle has ..... sides

Darts

Find the scores for each person

NAME	SCORES	TOTAL
Craig	12, 12, 12	
Russell	3, 5, Double 4	
Lynda	Triple 8, 1, 10	
Carla	8, 14, 11	
Beverley	Double 20, 2, Double 14	

What combination of 45c & 50c stamps do you need to post letters with these amounts.

$1.45 _____

$1.40 _____

$1.35 _____

$1.95 _____

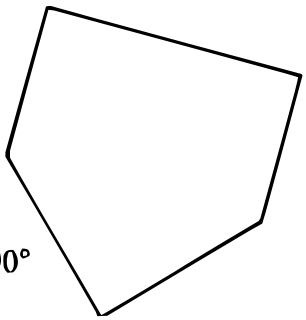
$2.35 _____

Draw a circle using point O as a centre and radius 25mm

O

What is the circle's diameter?

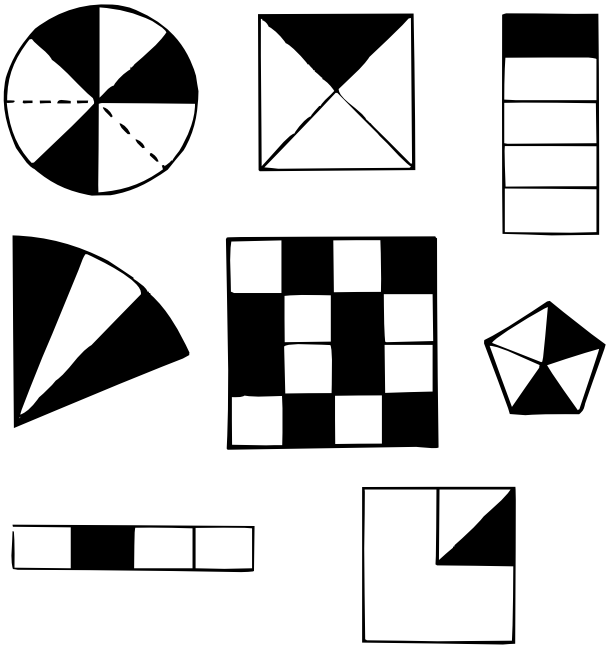
Measure all the angles



How many equal 90°

What do they all add up to?

What fraction of each picture is shaded?



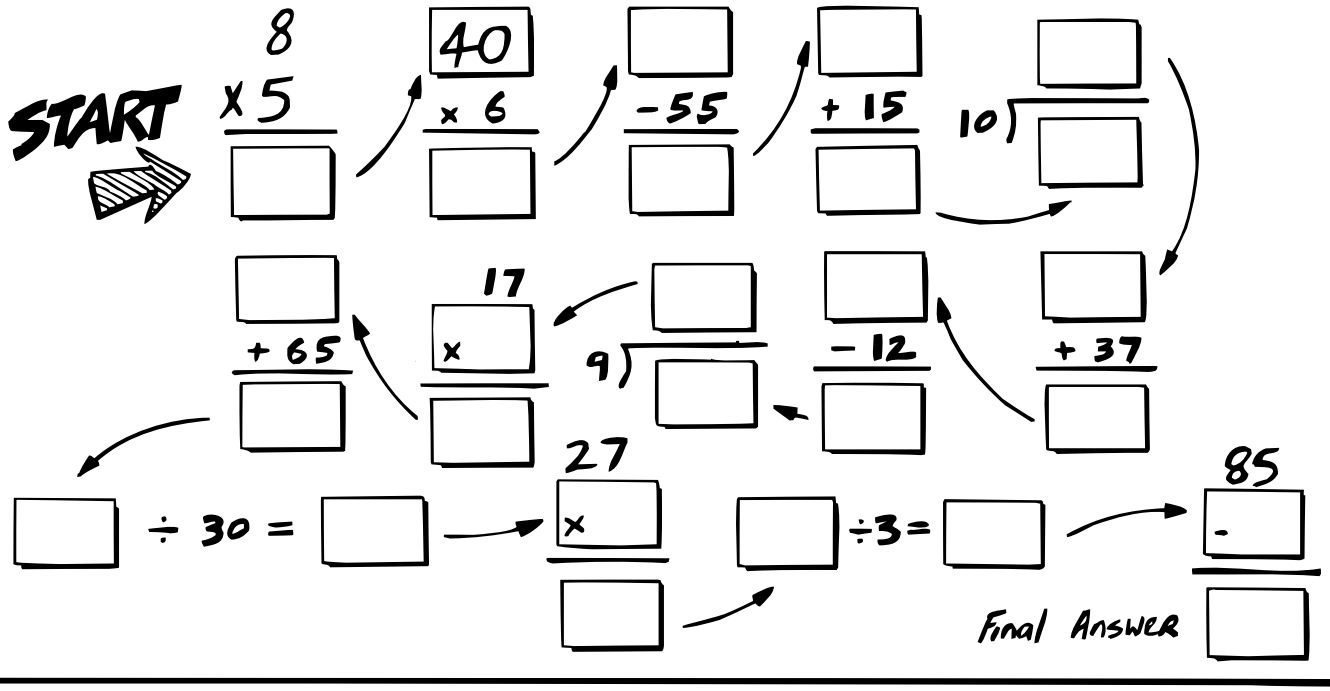
Complete these patterns

80 , 40 , ____ , ____ , ____ , $2\frac{1}{2}$, ____

80 , 70 , 60 , ____ , ____ , ____ , 20

100 , 105 , 110 , ____ , ____ , ____ , 130

9 , 18 , 27 , ____ , ____ , ____ , 63



Use your number skills to fill in the gaps.

17 + 8 = 15 + ____	(4 + 9) - 6 = _____	14 + 8 = ____ + 12
13 + 4 = 9 + ____	(4 + 5) + ____ = 21	36 - ____ = 20 + 10
18 + ____ = 10 + 10	(9 - 6) + ____ = 12	5 + 5 = ____ + 3
5 + ____ = 7 + 9	(14 + 6) - 12 = _____	4 + 9 = ____ + 7
6 + 8 = ____ + 2	(15 - 11) + ____ = 9	17 + 3 = 12 + ____

Now write X or ÷ in each ☐ to make true sentences.

12	☐	4 = 3	24	☐	2 = 12	72	☐	12 = 6
18	☐	3 = 6	7	☐	7 = 49	8	☐	5 = 40
2	☐	9 = 18	60	☐	6 = 10	9	☐	7 = 63
12	☐	3 = 36	49	☐	7 = 7	16	☐	8 = 2

Complete these number sentences.

16 + 4 = 10 + ____	100 - 20 = 2 × _____	18 ÷ 2 = 2 + _____
3 × 8 = ____ + 16	6 + 12 = ____ × 9	4 × 9 = 40 - ____
27 - 2 = 5 × ____	(12 ÷ 4) + 7 = _____	8 × 2 = ____ + 5
14 - 9 = ____ ÷ 3	(6 × 7) - 2 = _____	6 × ____ = 35 - 5
54 ÷ 6 = 18 ÷ ____	15 + 5 = 5 × ____	3 × 8 = ____ + 5
7 × 8 = 2 × ____	27 - 6 = 7 × ____	12 + 5 = 20 - ____

HOW MANY...

Days in 1 week? _____

Months in 1 year? _____

Days in October? _____

Weeks in 1 year? _____

Hours in 1 day? _____

Hours in 1 week? _____

Minutes in 1 hour? _____

Minutes in 1 day? _____

Hours per day at school? _____

Hours per week at school? _____

TRY THESE...

$3 \times 6 =$ _____ $16^2 =$ _____

$93 + 7 =$ _____ $10 \times 11 =$ _____

$160 \div 5 =$ _____ $3 \times 90 =$ _____

$27 \div 9 =$ _____ $6 - 0.5 =$ _____

$420 \div 70 =$ _____ $240 \div 60 =$ _____

$107 - 15 =$ _____ $2 \div 0.5 =$ _____

$12 \times 80 =$ _____ $\frac{1}{5} + \frac{3}{5} =$ _____

$70 \times 3 =$ _____ $64 \div 0.8 =$ _____

$132 \div 11 =$ _____ $57 + 9 =$ _____

$20 =$ _____ $\times 4$

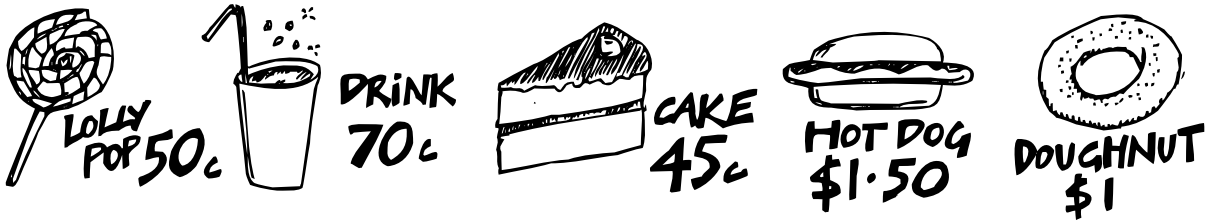
$49 = 7 \times$ _____

$55 \times 36 =$ _____ $\times 5 \times 4 \times 11$

$63 = 7 \times$ _____ $\times 3$

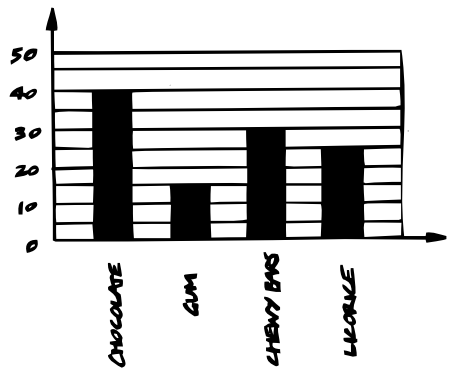
$44 + 66 + 55 = 100 +$ _____

Complete the table	
0·5 of 20	
0·25 of 40	
0·75 of 20	
0·5 of 25	
0·1 of 100	
20% of 50	
10% of 80	
50% of 30	
25% of 200	
12% of 120	



PERSON	HAD	BOUGHT	SPENT	HAD LEFT
RODNEY	$5	2 HOT DOGS		
EPI	$2	1 DRINK & 1 DOUGHNUT		
DIANNE	$3·50	2 LOLLY POPS & 1 CAKE		
MAXWELL	$10	1 DRINK & 1 CAKE		
CLAUDIA	$20	3 OF EVERYTHING!!		

Favourite Lollies



Which lolly is the most popular? _____

How many voted for licorice? _____

What item did 30 people vote for? _____

How many voted altogether? _____

Sixty girls voted altogether. How many boys voted? _____

Five classes of equal size voted. How many in each class? _____

THE MIGHTY MATHS WORKSHEET 8

Complete the sentences so that they equal 24

6 x	16 +	30 –	48 ÷
11 +	27 –	12 x	(3 x 3) +

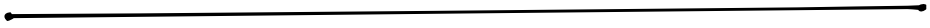
TRY THESE

417 212 653 976	416 x25	3174 –267

Measure these lines

____ mm

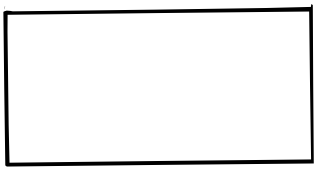
____ mm



____ cm

Find the perimeter and area of these 3 shapes. You will need to measure each side first

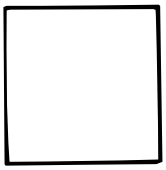
1



Perimeter = _____

Area = _____

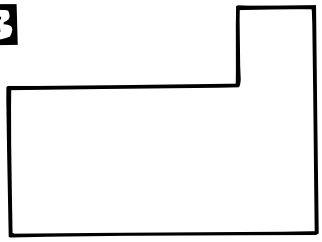
2



Perimeter = _____

Area = _____

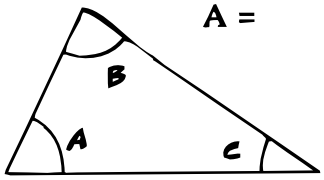
3



Perimeter = _____

Area = _____

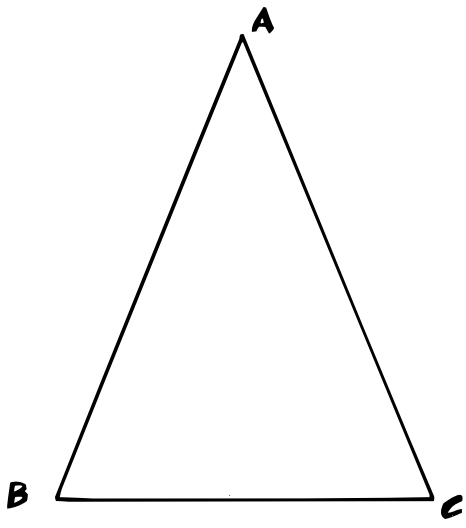
Measure the 3 angles in this triangle



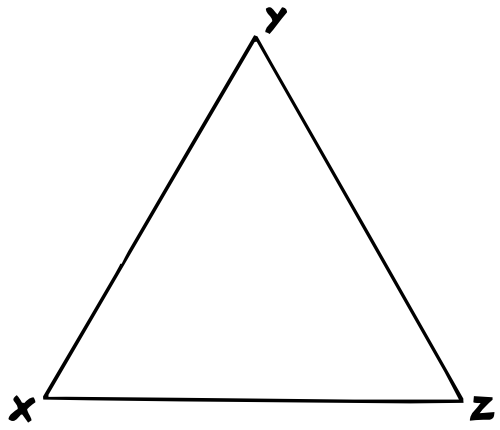
A = B = C =

A + B + C =

This is an ..... triangle



This is an ..... triangle



Using a compass bisect angle BAC and angle XYZ

---

1 In a cricket season, Tony hit 26 boundaries. A boundary is worth 4 runs. How many runs did Tony score in boundaries?

.....

2 During December, Mary ran 3km each day. How far did she run altogether in December?

.....

3 In the athletic club grandstand there are 40 rows of seats. Each row has 25 seats. How many seats are there altogether?

.....

4 The school principal bought each league player a blazer. Each blazer costs $65 and there are 18 players (reserves included). How much did the principal have to pay?

.....

Find a place for each card. (You can only use each card once.)

1 2 3 4 5 6 7 8 9 9 0

□ × 8 = □□ 0 × □ = 0 2 × 13 = □□

7 × 1□ = □3□ □ × 12 = □4

THE MIGHTY MATHS WORKSHEET 9

Divide by 5

35	50	25	5	15	60

Divide by 4

32	40	24	4	6	36

What is the value of 5 in 405,621?

1m= ..... mm

..... A cube has ..... faces

0.5km = ... m

Minutes between 10:35am and 1.10pm? .....

Write $\frac{7}{10}$ as a decimal .....

$\frac{1}{2} = \frac{}{8}$

24 + 35 = ____	13 × 7 = ____	12 + 14 = ____
12 + 17 = ____	72 - 8 = ____	34 - 16 = ____
24 - 16 = ____	48 ÷ 2 = ____	22 + 13 = ____
(4 × 6) + ____ = 32	2 × ____ × ____ = 18	(6 × 7) + ____ = 60
3 × 7 = 16 + ____	8 × (4 + 3) = ____	4 × 2 × ____ = 40
28 - 6 = ____ + 10	(8 × 4) + 3 = ____	27 + ____ = 54 - 12

Each box has a number that does not belong.

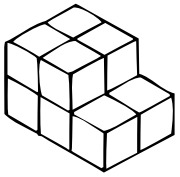
Circle that number

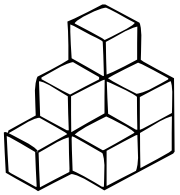
3 42 36 18 12 21 50 27 15 9

35 55 40 25 10 70 47

$\frac{20}{40}$ $\frac{3}{6}$ $\frac{12}{24}$ $\frac{4}{8}$ $\frac{10}{20}$ $\frac{2}{3}$ $\frac{2}{4}$ $\frac{8}{16}$

How many cubes are needed to build each of these models?

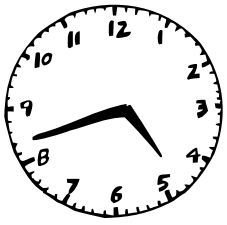




FINISH THESE SQUARES

×	3	4	6	9
2				
5				
7				
8				

+	8	5	3	1
7				
6				
2				
9				

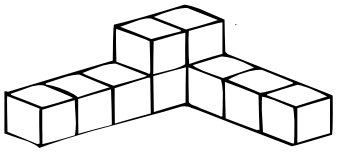


Using the clock, write the time in two different ways

_____

_____

How many minutes till the clock shows 5 o'clock? _____



How many cubes make up this model?

_____

1. Aukuso left for rugby at 1:30pm. He arrived at 2:14pm. How long did it take?

_____

2. He arrived back home at 6:45. How long was he away?

_____

3. Ten children stand in a line. Each is 2m apart. How far from the first child to the last?

_____

4. 15 children stand in a circle. Each one is 1m apart. What is the circumference of the circle?

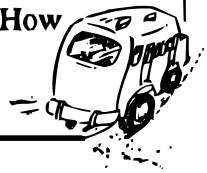
_____

THE GREAT

WRITE YOUR ANSWERS HERE & ADD THEM UP

3 - ___ = 1	___
8 - ___ = 1	___
___ - 6 = 1	___
___ - 5 = 1	___
(7 + 4) - ___ = 1	___
(6 - 2) - ___ = 1	___
___ - (4 + 7) = 1	___
___ - (8 - 5) = 1	___
6 - (___ + 3) = 1	___
(10 - 9) + ___ = 1	___
TOTAL	___

A bus has 20 people on it. At the first stop 8 people get on. At the next, 4 get off and 2 get on. At the next stop 3 get on and 7 get off the bus. At the next stop 3 people get off. How many times did the bus stop?

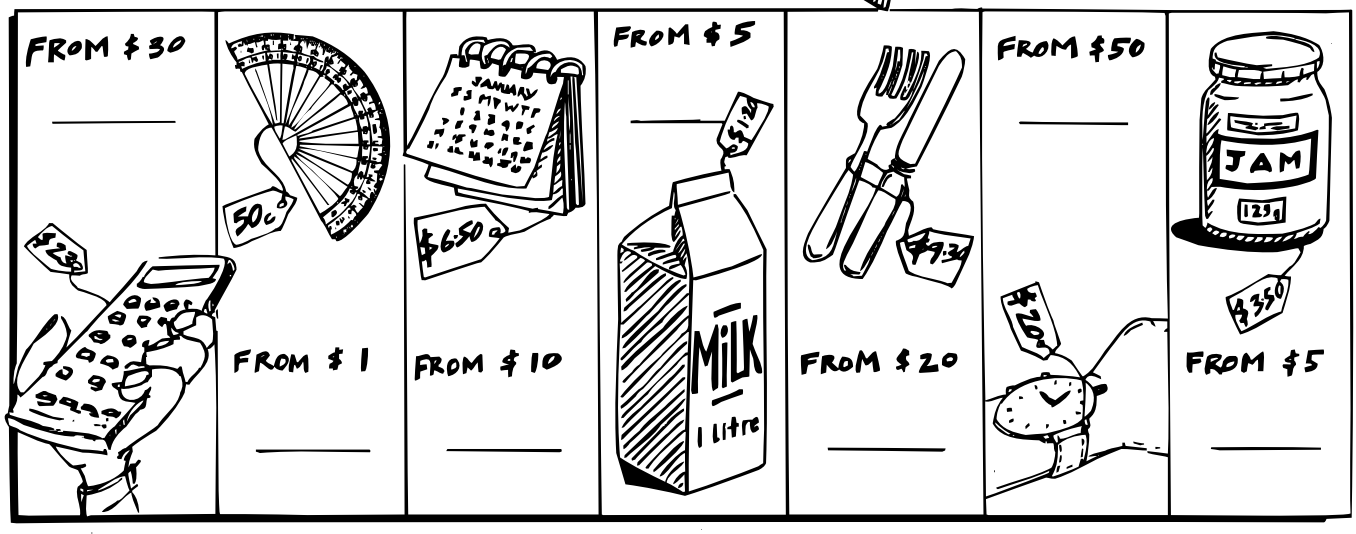


THE MIGHTY MATHS WORKSHEET 10

Write = < or > in each space

$\frac{2}{8}$	_____	$\frac{4}{16}$	4 + 9	_____	8 + 3	15mm	_____	10 cm
$\frac{1}{2}$	_____	$\frac{1}{3}$	27 − 15	_____	16 ÷ 4	1m	_____	300mm
$\frac{1}{4}$	_____	$\frac{1}{2}$	7 × 4	_____	14 × 2	2·5km	_____	3000 m
$\frac{3}{8}$	_____	$\frac{3}{4}$	12 + 8	_____	25 − 7	150m	_____	15 cm
$\frac{3}{4}$	_____	$\frac{2}{3}$	12 × 3	_____	6 × 8	5 km	_____	500 m

Calculate the change



April

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

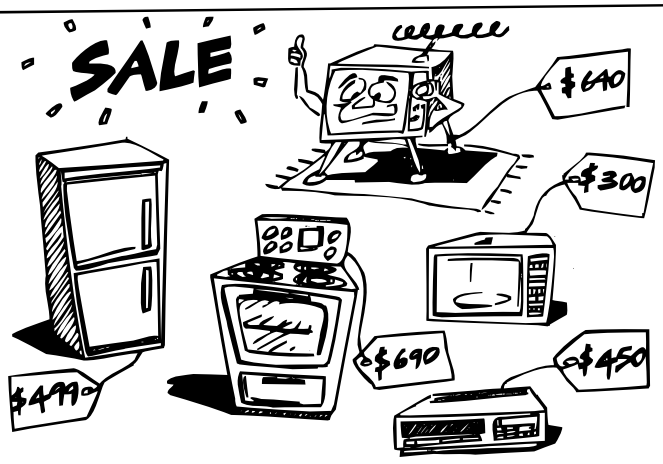
What is the date of the first Monday? _____

How many Fridays are there in the month? _____

How many days are there in the month? _____

Lynda is working and she is paid every 2 weeks. If she was last paid on Tuesday 2nd when will she be paid again? _____

Lynda's birthday is on the 28th of March. What day is this? _____



Find the cost of

Microwave & Oven _____

TV & Video _____

Fridge & Oven _____

Microwave & Video _____

Fridge & TV _____

All items _____

Number of Boxes of oranges picked at the local orchard

How many boxes were packed in 1990? _____

Was this the best year? _____

What is the difference between the best and worst years?

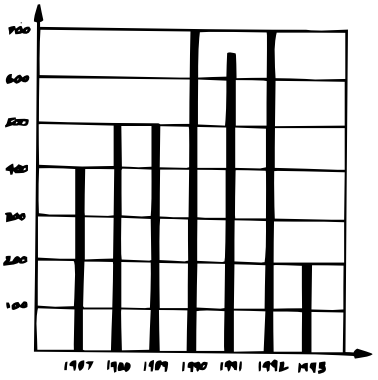
_____

In 1987, the number of boxes of oranges picked was four times better than in 1986. How many were picked in 1986? _____

In 1994 the orchardist hopes to pick 1000 cases of oranges. By how many will he have to improve on 1993?

_____

What year produced 650 boxes of oranges? _____



Find the cost

2 Adults, 1 pupil _____

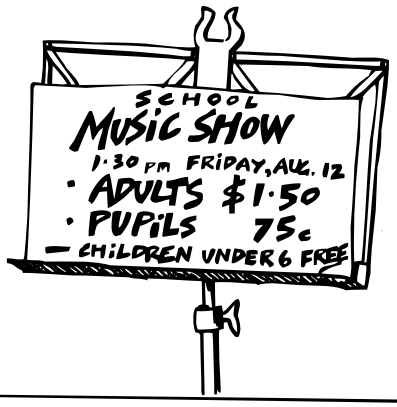
3 Adults, 1 child _____

4 Pupils _____

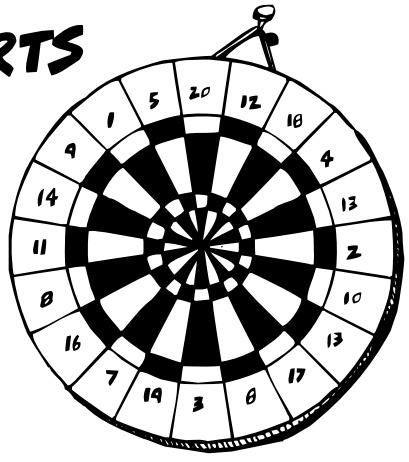
The concert started at .....(24 hour time)

The concert lasts for 80 minutes. What time does it finish?

Rehearsals started 4 weeks beforehand. Give the start date



DARTS



NAME	SCORE	TOTAL
Shiree	20, Double 5, 12	
Mary	Triple 8, 14, 11	
Jim	Double 19, 7, 3	
Hugh	12, 20, 18	
George	Triple 16, Double 8, 7	
Paula	Double 6, 17, 3	

During the year collect all the examples you can from newspapers and magazines, of ANY number. Stick them to this page.