

Maths

End of Year Assessments

Revision Notes

Important Websites:

- Mathswatch: <https://vle.mathswatch.co.uk/vle/>

You have tasks to complete and videos will help you answer the questions.

- Corbett Maths: <https://corbettmaths.com/>

Lots of questions to answer and video clips to help you learn and revise.

- BBC Bitesize:

<https://www.bbc.co.uk/bitesize/subjects/z38pycw>

Year 7 Theta: End Of Year Maths Assessment:

1	You can solve one-step equations.
2	You can add/subtract negative numbers.
3	You can recall the definitions of statistical terms.
4	You can multiply a fraction by an integer.
5	You can recognise the properties of 3-D shapes.
6	You can solve linear equations. You can factorise into a single bracket.
7	You can solve number problems.
8	You can convert between fractions and percentages.
9	You can add fractions. You can multiply fractions.
10	You can solve number problems.
11	You can calculate powers and roots without a calculator.
12	You can share into a given ratio.
13	You can interpret composite bar charts.
14	You can decrease by a percentage.
15	You can find the volume of prisms.

PROMPT sheet

3/1 Place value

The position of the digit gives its size

thousands	hundreds	tens	units	•	tenths	hundredths
4	3	5	2	•	6	1

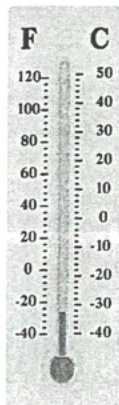
Example

The value of the digit '4' is 4000

The value of the digit '3' is 300

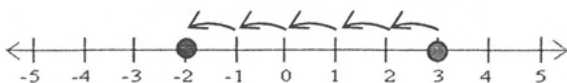
3/2 Recognise negative numbers

- These can be seen on a thermometer



The numbers below freezing (0°) are negative

- Number line to work out sums



$$3 - 5 = -2$$

3/3 Multiples

- Multiples are the number sequences that make up the tables

Example

The multiples of 2 are:

2 4 6 8 10 ...

The multiples of 5 are:

5 10 15 20 25 ...

The multiples of 10 are:

10 20 30 40 50 ...

3/4 Fractions

$\frac{1}{2}$ ← numerator

← denominator

- This means 1 part out of every 2

Example 1



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



$$\frac{5}{10}$$

These fractions are all $\frac{1}{2}$

$$\frac{1}{2} \quad \frac{2}{4} \quad \frac{3}{6} \quad \frac{4}{8} \quad \frac{5}{10}$$

Example 2

$$\frac{2}{3}$$

- This means 2 part out of every 3



$$\frac{2}{3} =$$



$$\frac{4}{6}$$

3/5 Decimals

- Decimals and money

£3.00 means 300p

£3.50 means 350p

£3.05 means 305p

Remember

A calculator does not know if the numbers you put in are money so £3.50 will look like 3.5

- Ordering Decimals

1.23 m	1.6 m	1.65 m	1.3 m
↓	↓	↓	↓
1.23 m	1.60 m	1.65 m	1.30 m

Make the number of digits the same, it is easier to order them

Smallest $\xrightarrow{\hspace{10em}}$ Largest
 1.23 m 1.30 m 1.60 m 1.65 m

3/6 Know the 3, 4 and 6 times tables

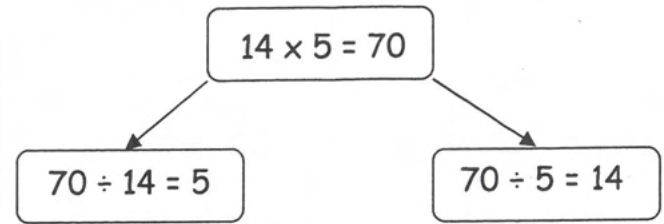
1 x 3 = 3
2 x 3 = 6
3 x 3 = 9
4 x 3 = 12
5 x 3 = 15
6 x 3 = 18
7 x 3 = 21
8 x 3 = 24
9 x 3 = 27
10 x 3 = 30

1 x 4 = 4
2 x 4 = 8
3 x 4 = 12
4 x 4 = 16
5 x 4 = 20
6 x 4 = 24
7 x 4 = 28
8 x 4 = 32
9 x 4 = 36
10 x 4 = 40

1 x 6 = 6
2 x 6 = 12
3 x 6 = 18
4 x 6 = 24
5 x 6 = 30
6 x 6 = 36
7 x 6 = 42
8 x 6 = 48
9 x 6 = 54
10 x 6 = 60

3/7 Division facts from a multiplication

Any multiplication sum can be written as 2 division sums



3/8 Balancing a sum

left hand side is equal to right hand side

$$3 \times 4 = 12$$

This can be used to find missing numbers

$$3 \times 4 = 3 + \square$$

$$12 = 3 + 9$$

So $\square = 9$

3/9 Add 2 digit numbers mentally

Partitioning

$$36 + 19$$

$$30 + 6 + 10 + 9$$

$$= 40 + 15$$

$$= 55$$

$$36 + 10 + 9$$

$$= 46 + 9$$

$$= 55$$

3/9 Subtract 2 digit numbers mentally

$$63 - 26$$

Partitioning

$$63 - 20 - 6$$

$$= 43 - 6$$

$$= 37$$

Counting on from 26

$$(26) + 4 + 33$$

$$= 37$$

3/11 Solve problems

- When to multiply and when to divide
- When to round up and when to round down

Here is an example



There are 17 children in the playground.
Each bench in the yard can seat 3 children.
How many benches will be needed?

$$17 \div 3 = 5 \text{ r } 2$$

- We need to divide to share the children around the benches
- We need to round up to 6 benches for the remaining 2

Here is another example

Dan made 47 cakes.
He sells them in boxes of 6.
How many full boxes will we have?



$$46 \div 6 = 7 \text{ r } 4$$

- He needs to divide to share the cakes into boxes
- He needs to round down to 7 boxes because he needs to have 6 cakes in each box

3/12 Written method for addition

- Line up the digits in the correct columns

e.g. $132 + 239$

H	T	U
1	3	2
2	3	9
3	7	1

3/12 Written method for subtraction

- Line up the digits in the correct columns

e.g. $327 - 119$

H	T	U
3	2	7
1	1	9
2	0	8

3/13 Methods for multiplying

$$38 \times 3$$

Column method

$$\begin{array}{r} 38 \\ \times 3 \\ \hline 114 \end{array}$$

Grid method

30	8
3	24

$$90 + 24 = 114$$

Partitioning method

$$\begin{aligned} 38 \times 3 &= 30 \times 3 + 8 \times 3 \\ &= 90 + 24 \\ &= 114 \end{aligned}$$

To multiply by 10

Move all the digits along one place to the left.
Remember to put a zero in the units.

H	T	U
	3	0
3	0	0

$$30 \times 10 = 300$$

3/13 Methods for dividing

$$25 \div 3$$

$$8 \times 3 = 24 \quad \text{So } 25 \div 3 = 8 \text{ r } 1$$

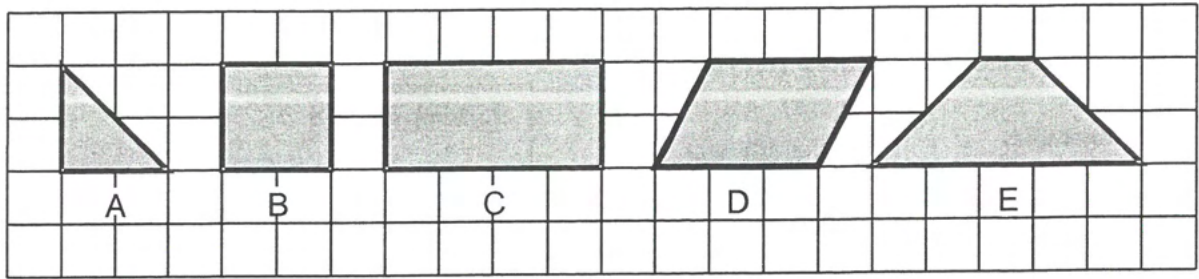
To divide by 10

Move all the digits along one place to the right.

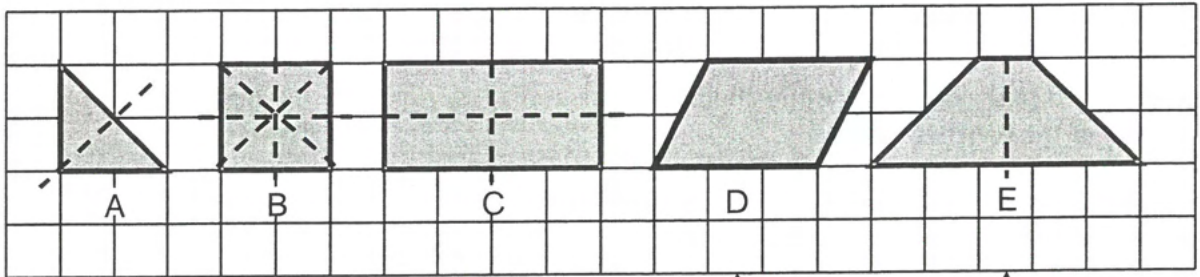
H	T	U
	3	0
		3

$$30 \div 10 = 3$$

3/14 Classify 2D shapes

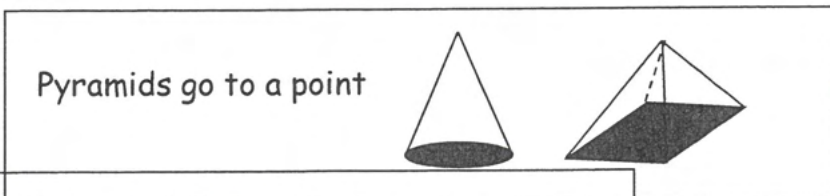
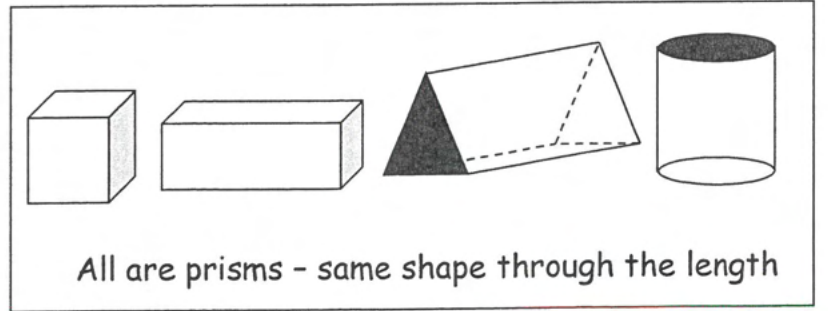
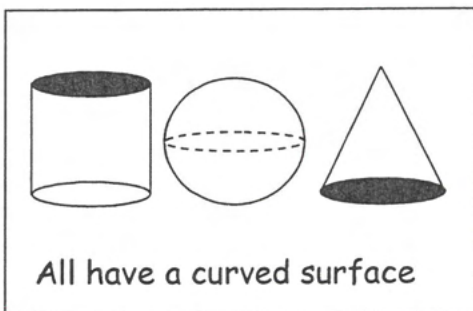
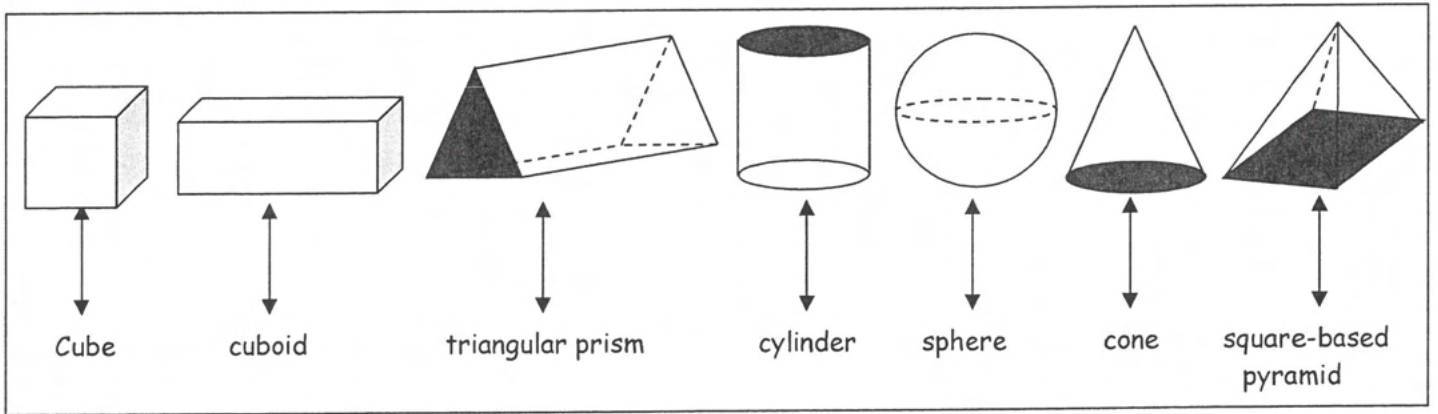


Triangle Square Rectangle Parallelogram Trapezium



Reflective symmetry Reflective symmetry Reflective symmetry NO reflective symmetry Reflective symmetry

3/14 Classify 3D shapes



3/15 Nets of 3D shapes

PROMPT sheet

6/1 Equivalent fractions, decimals & percentages

- Percentage to decimal to fraction

$$27\% = 0.27 = \frac{27}{100}$$

$$7\% = 0.07 = \frac{7}{100}$$

$$70\% = 0.7 = \frac{70}{100} = \frac{7}{10}$$

- Decimal to percentage to fraction

$$0.3 = 30\% = \frac{3}{10}$$

$$0.03 = 3\% = \frac{3}{100}$$

$$0.39 = 39\% = \frac{39}{100}$$

- Fraction to decimal to percentage

$$\frac{4}{5} = \frac{80}{100} = 80\% = 0.8$$

Change to 100

$$\frac{3}{8} = 3 \div 8 = 0.375 = 37.5\%$$

6/2 Increase/Decrease by a percentage

- To increase £12 by 5%

$$= 1.05 \times \text{£}12 \quad (100\% + 5\% = 105\%)$$

OR

$$= \text{£}12 + 5\% \text{ of } \text{£}12$$

- To decrease £50 by 15%

$$= 0.85 \times \text{£}50 \quad (100\% - 15\% = 85\%)$$

OR

$$= \text{£}50 - 15\% \text{ of } \text{£}50$$

6/3 Divide a quantity into a given ratio

~ Put headings

~ Find how many shares in total

~ Amount \div no. shares = value of one share

e.g. Divide £240 between A and B in ratio of 3:5

A : B

3 : 5 = 8 shares

One share = £240 \div 8 = £30

A = 3 shares = 3 \times £30 = £90

B = 5 shares = 5 \times £30 = £150

6/4 Use proportional reasoning

- Change an amount in proportion

e.g. If 6 books cost £22.50

Find the cost of 11. (find cost of 1 first)

- Change amounts to compare

e.g. A pack of 5 pens cost £6.10

A pack of 8 pens cost £9.20

Which is the best buy? (find cost of 40 of each)

6/5 Calculate with fractions

- Add & subtract fractions

~ Make the denominators the same

$$\text{e.g. } \frac{1}{5} + \frac{7}{10}$$

$$= \frac{2}{10} + \frac{7}{10}$$

$$= \frac{9}{10}$$

$$\frac{4}{5} - \frac{10}{15}$$

$$= \frac{12}{15} - \frac{10}{15}$$

$$= \frac{2}{15}$$

- Multiply fractions

~ Write 7 as $\frac{7}{1}$

~ Multiply numerators & denominators

$$\text{e.g. } 5 \times \frac{2}{3}$$

$$= \frac{5}{1} \times \frac{2}{3}$$

$$= \frac{10}{3} = 3\frac{1}{3}$$

$$\frac{4}{5} \times \frac{2}{3}$$

$$= \frac{8}{15}$$

- Divide fractions

~Write 7 as $\frac{7}{1}$

~Flip numerator & denominator after ÷

~Multiply numerators & denominators

e.g. $5 \div \frac{2}{3}$	$\frac{4}{5} \div \frac{2}{3}$
$= \frac{5}{1} \times \frac{3}{2}$	$= \frac{4}{5} \times \frac{3}{2}$
$= \frac{15}{2} = 7\frac{1}{2}$	$= \frac{12}{10} = 1\frac{2}{10} = 1\frac{1}{5}$

- Calculate fraction of quantity

To find $\frac{4}{5}$ of a quantity ÷ 5 × 4

e.g. $\frac{4}{5}$ of £20 = $20 \div 5 \times 4 = £16$

6/6 Solve an equation by trial & improvement method

~ Find 2 consecutive numbers that the solution lies between

~ Then choose the half way number

~ Keep making improvements until the required accuracy achieved

e.g. To solve $x^3 - 3x = 6$ (correct to 1dp)

Try x =	$x^3 - 3x$	Comment
2	$2^3 - 2 \times 2 = 4$	Too small
3	$3^3 - 3 \times 3 = 28$	Too big
2.5	$2.5^3 - 3 \times 2.5 = 8.125$	Too big
2.3	$2.3^3 - 3 \times 2.3 = 5.267$	Too small
2.4	$2.4^3 - 3 \times 2.4 = 6.624$	Too big
2.35	$2.35^3 - 3 \times 2.35 = 5.928$	Too small

Solution is nearer 2.4 than 2.3

So $x = 2.4$ (correct to 1dp)

6/7 Solve linear equations

~Multiply out brackets first

~If there are letters on both sides get rid of the smaller first

~Do the same to both sides

e.g.

To solve $5(x - 3) = 3x + 7$ (expand bracket)

$$5x - 15 = 3x + 7 \quad (-3x \text{ from both sides})$$

$$2x - 15 = +7 \quad (+15 \text{ to each side})$$

$$\frac{2x}{2} = \frac{22}{2} \quad (\div 2 \text{ both sides})$$

$$x = 11$$

6/8 Sequences

- Understand position and term

Position	1	2	3	4
Term	3	7	11	15



+4

Term to term rule = +4

Position to term rule is $n \times 4 - 1$

(because position 1 $\times 4 - 1 = 3$)

nth term = $n \times 4 - 1 = 4n - 1$

- Generate terms of a sequence

If the nth term is $5n + 1$

$$1^{\text{st}} \text{ term } (n=1) = 5 \times 1 + 1 = 6$$

$$2^{\text{nd}} \text{ term } (n=2) = 5 \times 2 + 1 = 11$$

$$3^{\text{rd}} \text{ term } (n=3) = 5 \times 3 + 1 = 16$$

6/9 Plot graphs of linear equations

~Substitute values of x into the equation

~Plot the points in pencil

~Join the points with a ruler and pencil

~They should be in a straight line

e.g. $y = 3x - 1$

x	-2	-1	0	1	2
y	-7	-4	-1	2	5

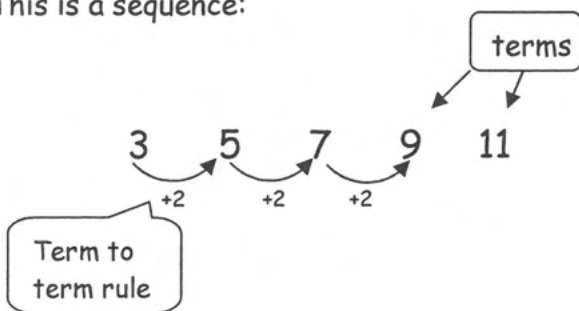
PROMPT sheet

4/1 Number Patterns

- A list of numbers with a pattern is called a SEQUENCE
- The numbers are called TERMS
- A 'TERM TO TERM RULE' tells you how to get from one term to the next

It might be add, subtract, multiply or divide by something

This is a sequence:



4/2 Multiples, factors & square numbers

- FACTORS are what divides exactly into a number

e.g. Factors of 12 are:

1	12
2	6
3	4

- MULTIPLES are the times table answers

e.g. Multiples of 5 are:

5 10 15 20 25

- SQUARES are the result of multiplying a number by itself

e.g. $1 \times 1 = 1$
 $2 \times 2 = 4$
 $3 \times 3 = 9$

Square numbers

4/3 Multiply & Divide by 10 or 100

- To multiply by 10, move each digit one place to the left
 e.g. $35.6 \times 10 = 356$

Hundreds	Tens	Units	•	tenths
	3	5	•	6
3	5	6	•	

- To divide by 10, move each digit one place to the right

e.g. $35.6 \div 10 = 356 = 3.56$

Tens	Units	•	tenths	hundredths
3	5	•	6	
	3	•	5	6

- To multiply by 100, move each digit 2 places to the left
- To divide by 100, move each digit 2 places to the right

4/3 Multiply & Divide by 10 or 100

AN ALTERNATIVE METHOD

Instead of moving the digits
 Move the decimal point the opposite way

4/4 Fraction, decimal, percentage equivalents

LEARN THESE:

$$\frac{1}{4} = 0.25 = 25\%$$

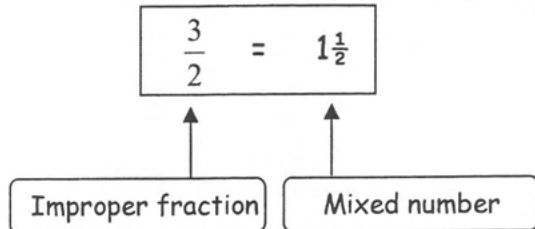
$$\frac{1}{2} = 0.5 = 50\%$$

$$\frac{3}{4} = 0.75 = 75\%$$

4/5 Convert mixed numbers to improper fractions & vv

- An improper fraction is top heavy & can be changed into a mixed number

$\frac{3}{2}$ can be shown in a diagram



- A mixed number can be changed back into an improper fraction

$$1\frac{1}{2} = \frac{3}{2}$$

$$2\frac{3}{4} = \frac{11}{4}$$

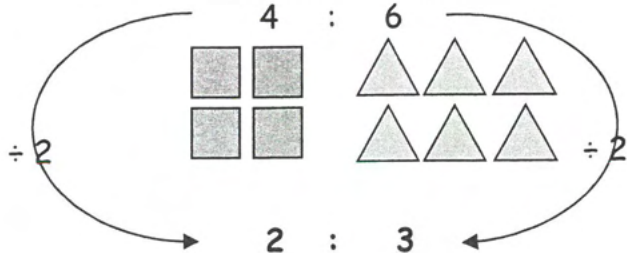
4/6 Simple ratio



The ratio of squares to triangles can be written

squares : triangles

4 : 6



Ratios can be simplified just like fractions

4/7 Use inverse operations

- To undo ADD, just SUBTRACT

e.g. $36 + \boxed{23} = 59$ ($59 - 36 = 23$)

- To undo MULTIPLY, just DIVIDE

e.g. $7 \times \boxed{3} = 21$ ($21 \div 7 = 3$)

- Use balancing:

$20 + \boxed{} = 20 \times 4$

$20 + \boxed{} = 80$

$20 + \boxed{60} = 80$ ($80 - 20 = 60$)

4/8 Brackets in calculations

A calculation must be done in the correct order

1. Brackets
2. Indices, Division and Multiplication
3. Addition and Subtraction

Using this order I get 3 different answers:

$$3 + 6 \times 5 - 1 = 32$$

$$(3 + 6) \times 5 - 1 = 44$$

$$3 + 6 \times (5 - 1) = 27$$

It all depends on where the bracket is

4/9 Times tables up to 10x10

It is important to know the times tables and the division facts that go with them

Example

$$9 \times 7 = 63$$

$$63 \div 9 = 7$$

$$63 \div 7 = 9$$

4/11 Coordinates in first quadrant

PROMPT sheet

5/1 Multiply & divide by 10, 100, 1000

- By moving the decimal point
To **multiply** by 10 move the dp ONE place RIGHT

e.g. $3.4 \times 10 = 34$

- To **divide** by 10 move the dp ONE place LEFT

e.g. $3.4 \div 10 = 0.34$

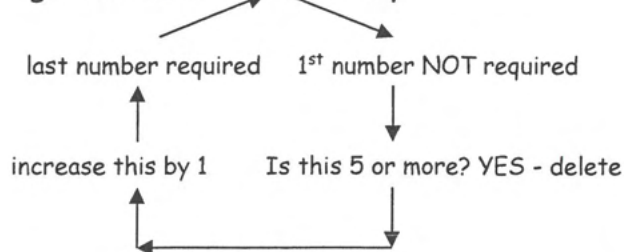
- By moving the digits
To multiply by 10 move the dp ONE place RIGHT

e.g. $3.52 \times 10 = 35.2$

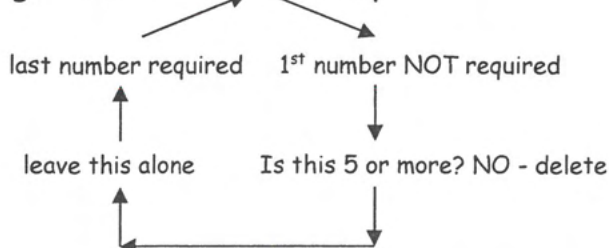
5/2 Rounding decimals

- Look at the last number required
- Look at the first number NOT required

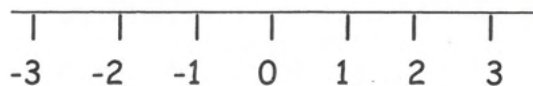
e.g. To round 5.47 to 1dp



e.g. To round 5.43 to 1dp



5/2 Order negative numbers



$2 > -2 \rightarrow$ We say 2 is bigger than -2

$-1 < 3 \rightarrow$ We say -1 is less than 3

5/3 Number patterns

Look to see how numbers are connected

- Multiples

Multiples of 6 are: 6, 12, 18, 24, 30...

- Factors

Factors of 6 are: 1, 6, 3, 2

- Prime numbers

Prime numbers have only TWO factors

2, 3, 5, 7, 11, 13, 17, 29, 31, 37

- Sequences

1, 4, 9, 16, 25, 36 ... are all square numbers

1, 8, 27, 64, 125 ... are all cube numbers

1, 4, 7, 10, 13, 16 ... increase by 3 each time

5/4 Order fractions and decimals

- Fractions

They must have the same denominator

e.g. $\frac{5}{6} \quad \frac{7}{12} \quad \frac{2}{3} \quad \frac{3}{4}$
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 $\frac{10}{12} \quad \frac{7}{12} \quad \frac{8}{12} \quad \frac{9}{12}$

Now the fractions can be ordered

- Decimals

Give them all the same number of digits

e.g. 0.3, 0.304, 0.32, 0.33
 $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$
 0.300 0.304 0.320 0.330

Now the decimals can be ordered

5/5 Cancel a fraction to its lowest terms

See what number divides exactly into both the numerator and denominator

$$\begin{array}{c} \div 4 \\ \text{e.g. } \frac{8}{12} \rightarrow \frac{2}{3} \\ \div 4 \end{array}$$

$$\begin{array}{c} \div 5 \\ \text{e.g. } \frac{15}{40} \rightarrow \frac{3}{8} \\ \div 5 \end{array}$$

5/6 Order of operations

Bracket

Indices

Divide

Multiply

Add

Subtract

} Do these in the order they appear

} Do these in the order they appear

$$\begin{array}{c} \text{e.g. } 3 + 4 \times 6 - 5 = 22 \\ \quad \quad \quad \uparrow \\ \quad \quad \quad \text{first} \end{array}$$

5/7 Fraction of quantity with calculator

- $\frac{4}{5}$ means $\div 5 \times 4$

$$\text{e.g. To find } \frac{4}{5} \text{ of } \pounds 40$$

$$\pounds 40 \div 5 \times 4 = \pounds 40$$

5/7 Percentage of quantity with calculator

- Change the percentage to a decimal

$$\begin{array}{ll} \text{e.g. } 8\% \text{ of } \pounds 240 & 12 \frac{1}{2}\% \text{ of } 80\text{kg} \\ = 0.08 \times 240 & = 0.125 \times 80 \\ = \pounds 19.20 & = 10\text{kg} \end{array}$$

$$\begin{array}{l} 80\% \text{ of } 52 \text{ litres} \\ = 0.8 \times 52 \\ = 41.6 \text{ litres} \end{array}$$

5/8 Multiply by a two digit number

Try different methods to find which suits you

$$\text{e.g. } 152 \times 34$$

COLUMN METHOD

$$\begin{array}{r} 152 \\ \times 34 \\ \hline 608 \quad (\times 4) \\ 4560 \quad (\times 30) \\ \hline 5168 \end{array}$$

$$\text{e.g. } 152 \times 34$$

GRID METHOD

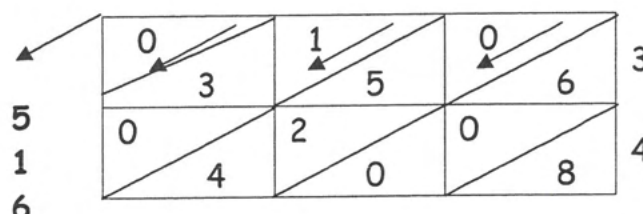
	100	50	2
30	3000	1500	60
4	400	200	8

$$152 \times 34 = 3400 + 1700 + 68 = 5168$$

$$\text{e.g. } 152 \times 34$$

CHINESE METHOD

$$\begin{array}{ccc} 1 & 5 & 2 \end{array}$$



$$8 = 5168$$

$$\text{e.g. } 152 \times 34$$

RUSSIAN METHOD

Half Double

$$\begin{array}{r} \downarrow \quad \downarrow \\ 152 \times 34 \\ 76 \quad 68 \\ 38 \quad 136 \\ 19 \quad 272 \\ 9 \quad 544 \\ 4 \quad 1088 \\ 2 \quad 2176 \\ 1 \quad 4352 \end{array}$$

Cross out left hand side even numbers

Add what is left

$$272 + 544 + 4352 = 5168$$

5/8 Divide by a two digit number

Try different methods to find which suits you

e.g. $4928 \div 32$ **BUS SHELTER METHOD**

- Divide
- Multiply
- Subtract
- Bring down - Make a new number
- Divide ...

$$\begin{array}{r}
 0154 \\
 32 \overline{) 4928} \\
 \underline{-32} \\
 172 \\
 \underline{-160} \\
 128 \\
 \underline{-128} \\
 000
 \end{array}$$

$4928 \div 32 = 154$

e.g. $4928 \div 32$ **CHUNKING METHOD**

<u>4928</u>	
<u>3200</u>	100 X 32
1728	
<u>1600</u>	50 X 32
128	
128	4 X 32

$4928 \div 32 = 154$

e.g. $4928 \div 32$ **SHORT DIVISION METHOD**

(Except write down some of your tables down first)

32	
64	
96	
128	
160	
	$ \begin{array}{r} 0154 \\ 32 \overline{) 4928} \\ \underline{4} \\ \underline{9} \\ \underline{17} \\ \underline{12} \\ \end{array} $

$4928 \div 32 = 154$

Remember the rules:

- When subtracting go down the number line
- When adding go up the number line
- $8 + - 2$ is the same as $8 - 2 = 6$
- $8 - + 2$ is the same as $8 - 2 = 6$
- $8 - - 2$ is the same as $8 + 2 = 10$

5/10 Ratio

- How it is written



Yellow : Red
= 2 : 6

- How it can be simplified



Yellow : Red
= 1 : 3

- Simplify by cancelling

Examples

$2^{+2} : 6^{+2} = 1 : 3$

$10^{+5} : 15^{+5} = 2 : 3$

5/10 Direct proportion

e.g.1

5 miles is approximately 8km.

How many miles are equal to 24km?

$24\text{km} \div 8\text{km} = 3$

$5 \text{ miles} \times 3 = 15 \text{ miles}$

e.g.2

It takes 90 Lego bricks to build 3 planes



How many bricks would be needed for 11?

1 plane uses $90 \div 3 = 30$ bricks

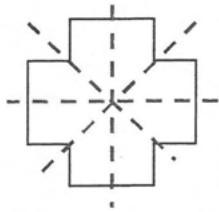
~~11 planes will use $11 \times 30 = 330$ bricks~~

~~5/12&13 Properties of 2D & 3D shapes~~

5/9 Negative numbers

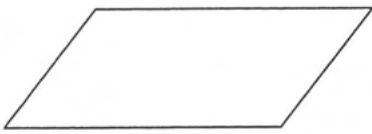
Symmetries

- Order of Line Symmetry
this is the number of times a shape can be folded so that one side falls exactly onto the other side



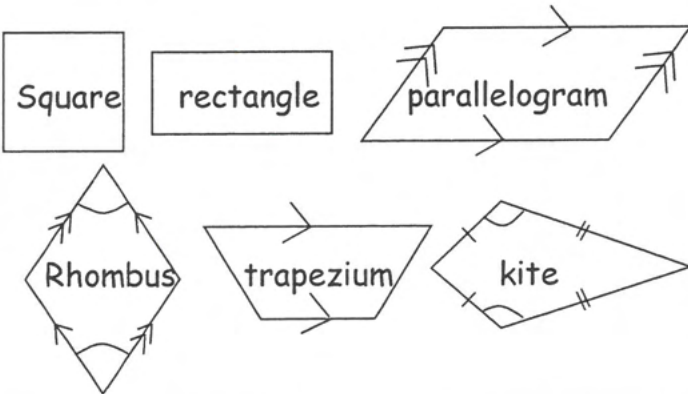
This shape has line symmetry ORDER 4

- Order of Rotational Symmetry
this is the number of times a shape falls into its outline in one complete turn

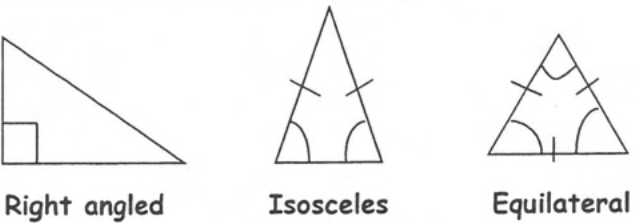


A parallelogram has rotational symmetry order 2

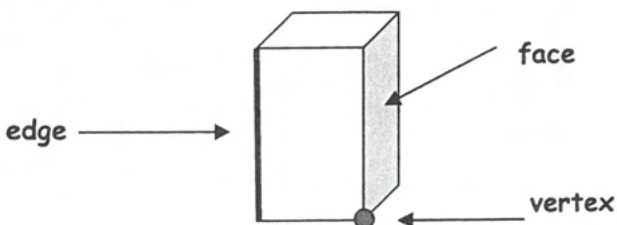
Names of shapes - Quadrilaterals



Names of shapes - Triangles



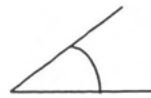
3D shape



5/14 Angles

Types of angles

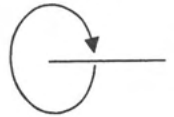
- Acute (less than 90°)
- Right (Exactly 90°)
- Obtuse (Between 90° & 180°)



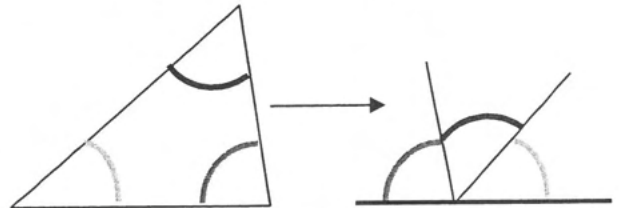
- Straight line (180°)

- Reflex (Between 180° & 360°)

- Complete turn (360°)



Angles of a triangle

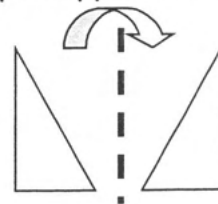


Angles of a triangle add up to 180°

5/15 Transform Shapes

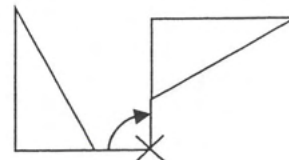
Reflection

A shape flipped over a line



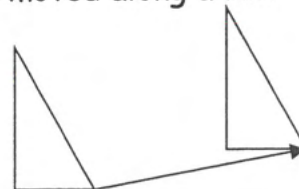
Rotation

A shape turned round a point



Translation

A shape moved along a line

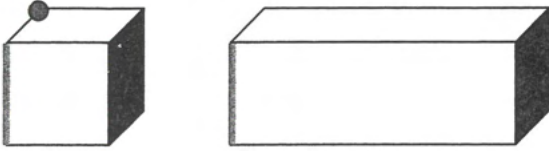


5/16 Measure and draw angles

PRISMS- same cross section through length

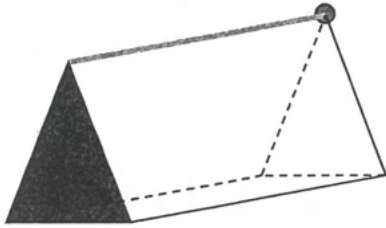
Cube and cuboid

- 6 faces
- 12 edges
- 8 vertices



Triangular prism

- 5 faces
- 9 edges
- 6 vertices



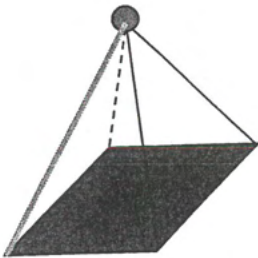
Cylinder - special prism



PYRAMIDS- a point opposite the base

Pyramid - square based

- 5 faces
- 8 edges
- 5 vertices



Pyramid - triangular based

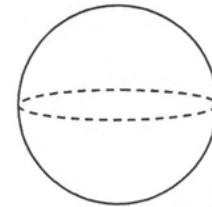
- 4 faces
- 6 edges
- 4 vertices



Cone - special pyramid

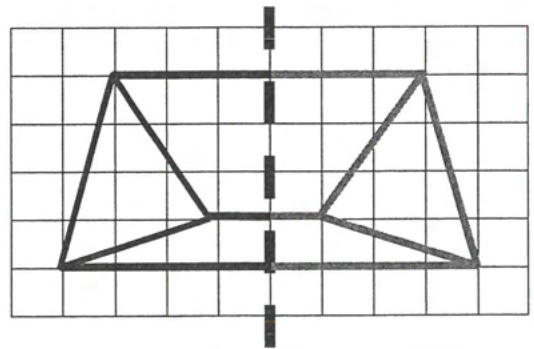


SPHERES- ball shape

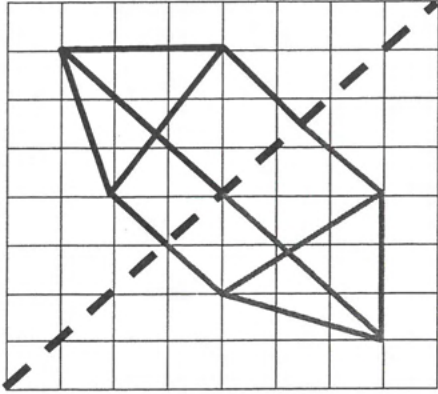


4/15 Reflect in a mirror line

- To reflect a shape in a vertical line



- To reflect a shape in a 45° line



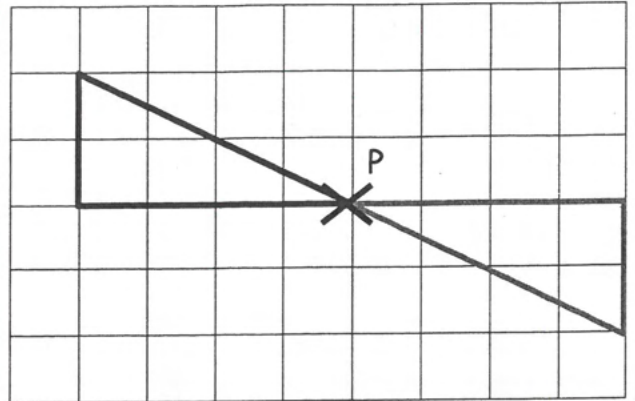
Distances from shape to mirror and mirror to reflection must be same

Tracing paper is useful:

1. Trace the shape & the mirror line
2. Flip the tracing paper over the mirror line
3. Redraw the shape in its new position

4/16 Rotate a shape

- To rotate a shape 180° about P

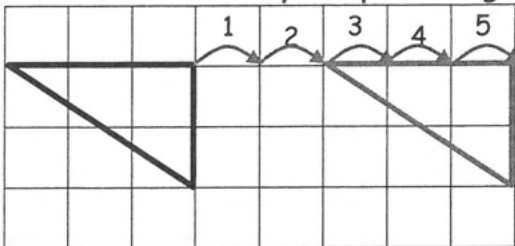


Tracing paper is useful:

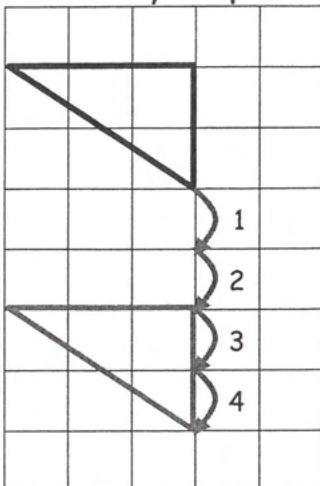
1. Trace the shape
2. Hold the shape down with a pencil
3. Rotate tracing paper
4. Redraw the shape in its new position

4/16 Translate a shape

- Move horizontally 5 spaces right



- Move vertically 4 spaces down



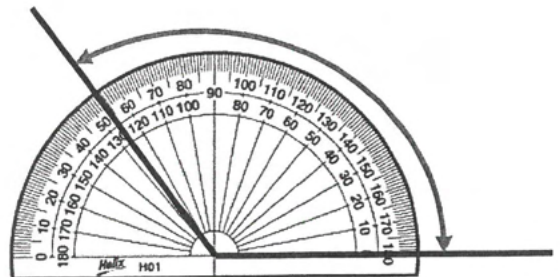
4/17 Use a ruler accurately



Measure from 0

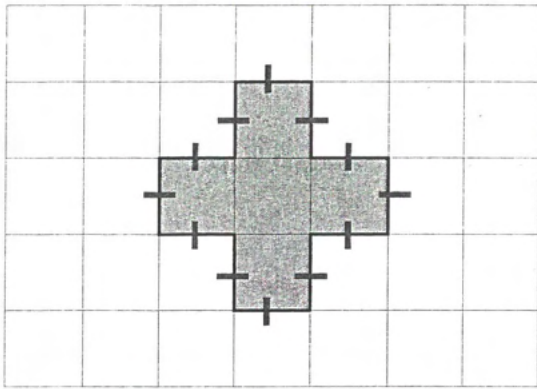
This line is 14.7cm long

Use a protractor accurately

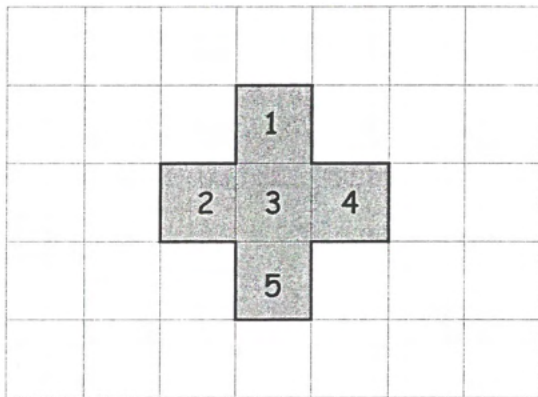


Count the number of degrees between the 2 arms of the angle. This angle is 127°

4/18 Find perimeter of simple shapes



- Perimeter is round the **OUTSIDE**
Perimeter of this shape = 12cm



- Area is the number of squares **INSIDE**
Area of this shape = 5cm²

4/19 Record using a frequency table

Score on dice	Tally	Frequency
1		10
2		4
3	I	6
4		3
5		8
6	I	1

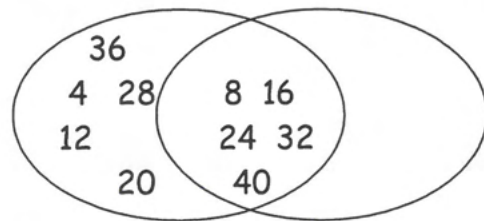
4/19 Record using a grouped frequency table

Weight(w)	Tally	Frequency
$15 \leq w < 20$		
$20 \leq w < 25$		
$25 \leq w < 30$		
$30 \leq w < 35$		
$35 \leq w < 40$		

4/20 Use a Venn Diagram

- To place these numbers onto a Venn diagram

4 8 12 16 20 24 28 32 36 40



Multiples of 4 Multiples of 8

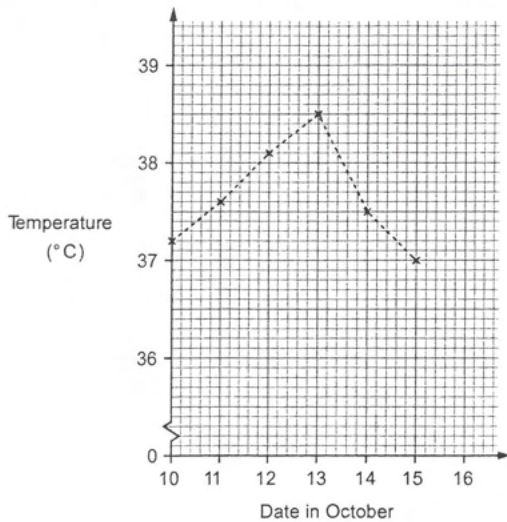
- To place these numbers onto a Carroll diagram

25 27 14 47 36 37 67
64 16 9 11

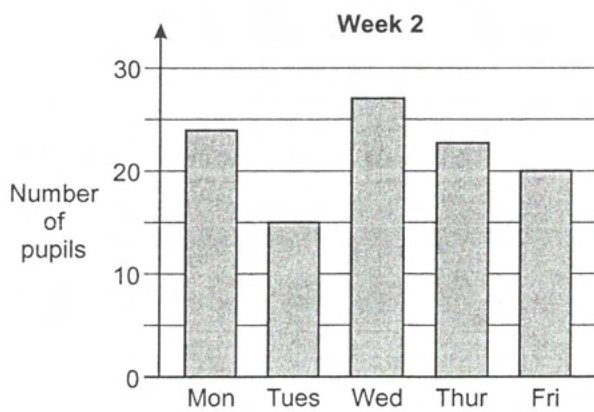
	Square number	Not a square number
Odd number of factors	9 16 25 36 64	
Even number of factors		11 14 27 47 37 67

4/21 Construct/interpret graphs

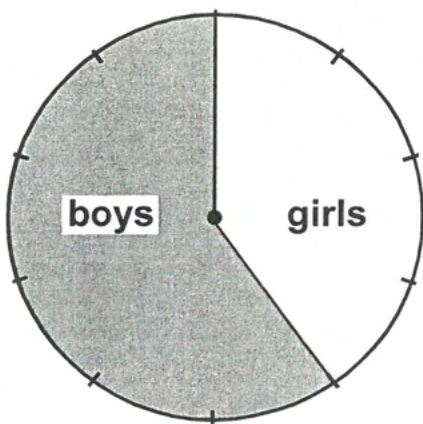
- Line graph - temperature



- Bar graph - Number of pupils at a youth club



- Pie chart - Number of pupils in the yard



4/22 Mode and Range

- Mode is the most frequent measure
- Range is highest minus lowest measure

4/23 Language of probability

- Probability words are used to describe how likely it is that an event will happen.

Examples of probability words are

- certain
- likely
- even chance
- unlikely
- impossible

Other words:

- **Equally likely** - when all outcomes have the same chance of occurring
- **Biased** - when all outcomes do NOT have the same chance of occurring