

Work out one number as a fraction or percentage of another

1. What fraction – in its lowest terms – is 16 out of 40?

2. What percentage is the same as $12/60$?

Understand that fractions, decimals and percentages can be equivalent to each other (eg $0.5=50\%$)

Copy and complete this table:

Fraction	Decimal	Percentage
$\frac{3}{4}$		
	0.6	
		45%
$\frac{5}{8}$		
	0.35	
		5%

□ Calculate using ratio

1. Share 36 into the ratio 1 : 3 : 5

2. Concrete is made from cement, sand and gravel in the ratio:

Cement	:	Sand	:	Gravel
1	:	3	:	4

How much cement and gravel will be needed for 120 kg of sand?

Add and subtract fractions with common denominators

1. Evaluate:

a. $\frac{2}{7} + \frac{3}{7}$

b. $\frac{7}{8} - \frac{5}{8}$

c. $3\frac{4}{5} + 2\frac{2}{5}$

d. $4\frac{7}{10} - 2\frac{3}{10}$

Find and describe in words the rule for the next term in a sequence (linear)

Describe the rule gives the next term in these sequences:

a) 4, 7, 10, 13...

b) 18, 10, 2, -6...

Find and describe in words the rule for the n^{th} term in a sequence

Describe the n th term rule for these sequences:

a) 4, 7, 10, 13...

b) 4, 9, 14, 19, 24...

Solve linear equations with integer coefficients

a) $5x = 10$	b) $x/5 = 7$
c) $x + 2 = 12$	d) $x - 7 = 43$
e) $3x + 6 = 18$	f) $4x - 5 = 19$
g) $3x + 5 = x + 13$	h) $4x - 5 = x + 13$
i) $4x + 2 = 2x - 18$	h) $5x - 12 = 3x - 2$

Plot the graph of $y = mx + c$

1. Using graph paper, plot the graphs of:

a. $y = x + 3$

b. $y = x - 1$

c. $y = 2x + 5$

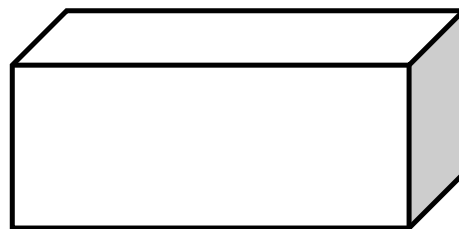
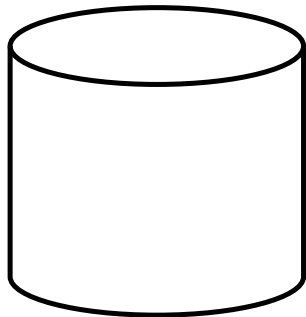
d. $y = 3x - 2$

e. $y = 6 - x$

f. $y = 8 - 2x$

Recognise 2D representations of 3D objects

Draw a front elevation, side elevation and plan of a cylinder and cuboid.

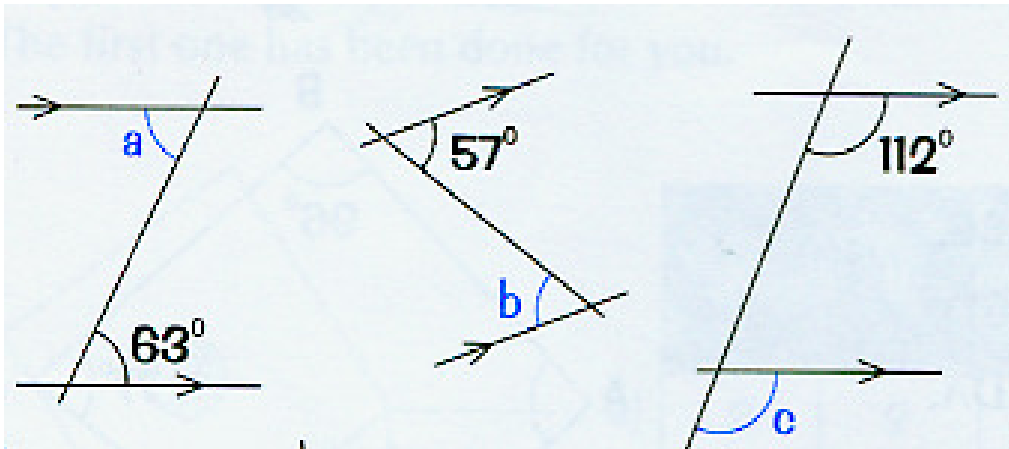


- Classify quadrilaterals by knowing their properties. Draw each of the quadrilaterals named in the table and explain the special things about the quadrilateral's sides, angles and symmetry.

Shape	Sides	Angles	Symmetry
Rectangle			
Square			
Parallelogram			
Rhombus			
Kite			
Trapezium			

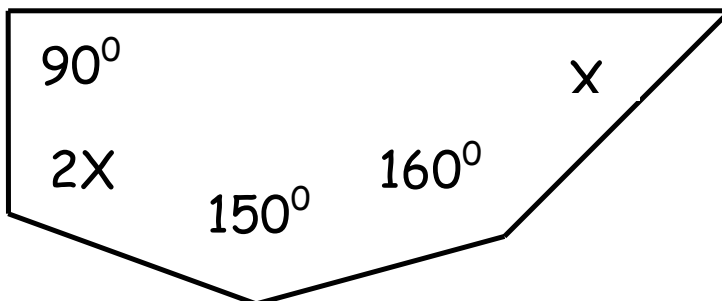
- Find the missing angles when two parallel lines are intersected

Find the angles a, b and c in the diagrams below.



- Solve angle problems in polygons

Calculate the value of X



Show that you understand how to find the interior and exterior angles of any regular polygon.

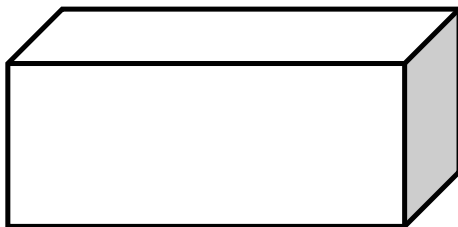
- Find the area and circumference of a circle

Copy and complete this table to show the information for the four circles

Radius	Diameter	Circumference	Area
4 cm			
	20 cm		
		75 cm	
			120 cm ²

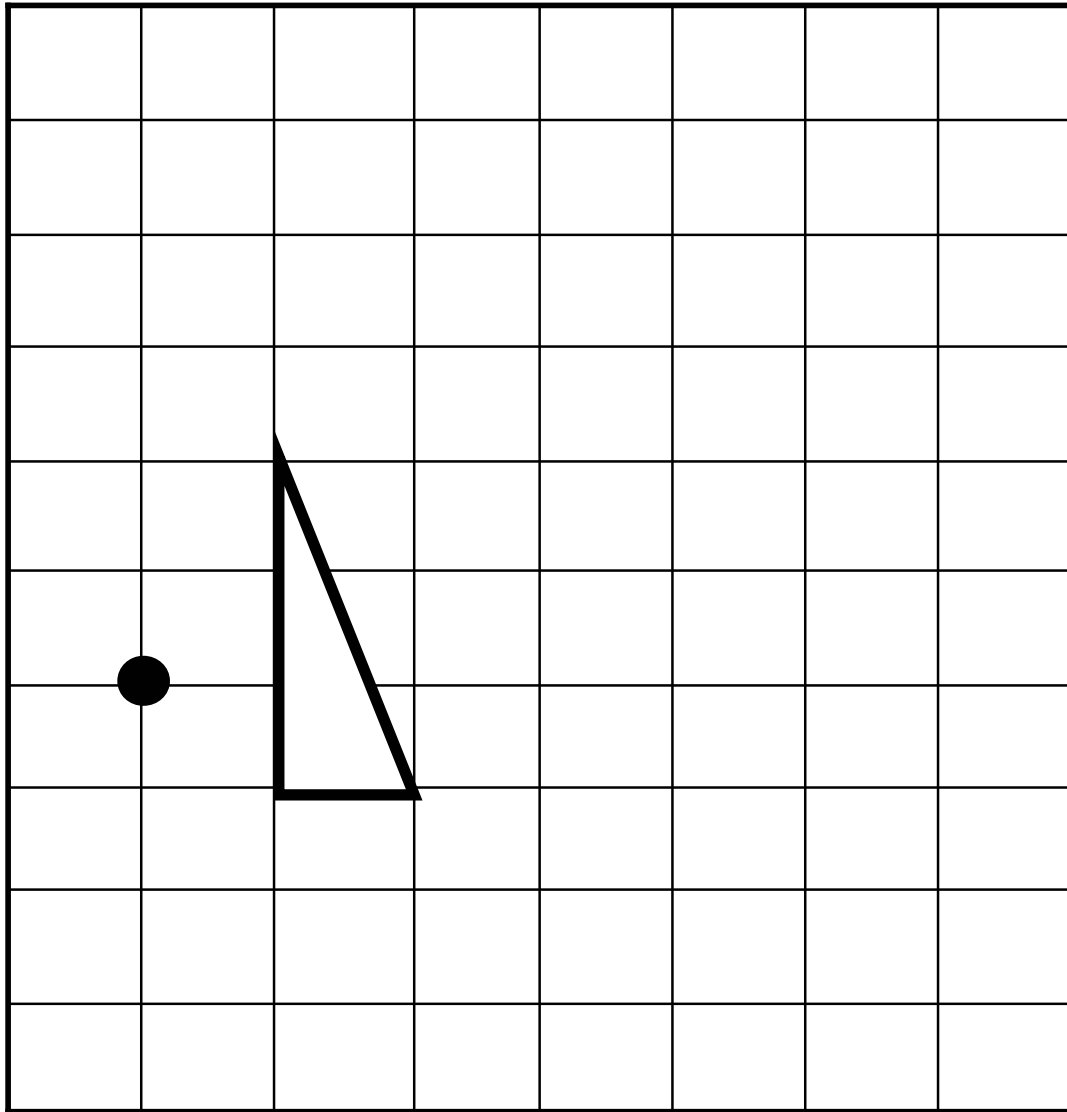
- Find the volume of cuboids

Calculate the volume of a cuboid with a 10 cm long by 3 cm high and 4 cm wide.



Enlarge a shape by a positive scale factor

Enlarge the triangle by a scale factor of 3 using the given centre of enlargement.



Work with continuous data

Here are the ages of ten people - 2, 11, 12, 12, 17, 18, 21, 23, 27 and 30. Write the frequencies for each class interval into the table below and then calculate an estimated mean age.

Age	Frequency
0 – 8	
8 – 16	
16 – 24	
24 – 32	

Construct pie charts

Here are the results of a survey of 72 people. It shows the people's favourite crisp flavour. Put the information onto a pie chart

Flavour	Frequency
Plain (Original)	30
Salt & Vinegar	20
Prawn	12
Cheese & Onion	10

Say what a scatter diagram tells us

Using graph paper, draw a scattergram to show this information.

.What type of correlation does the scattergram show?

Student	A	B	C	D	E	F	G	H	I	J	K	L	M
Age	11	12	14	13	12	11	15	16	16	14	13	12	15
Shoe Size	4	6	7	6	5	3	8	8	10	8	7	5	9

Understand correlation

Explain what is meant by:

Positive Correlation

Negative Correlation

No Correlation

Weak positive/negative correlation

Strong positive/negative correlation

- Find all the possible outcomes of two experiments

A single dice and a coin are thrown at the same time. What is the probability of getting a 4 and a head – $P(4 \text{ \& \; Head})$

- Use the fact that the probability of mutually exclusive events add up to 1

If a football team's probability of winning the next match is 0.4 and probability of losing the next match is 0.5, what is the probability of the team obtaining a draw in the next match?