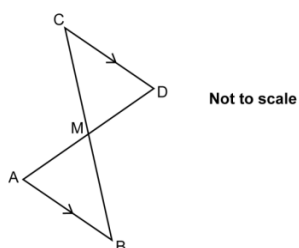## SEQUENCES

a) Write the first 5 terms of the sequence:
$$n^2 + 2n$$

b) Find the nth term of:
$$3, 13, 27, 45, 67$$

STANDARD FORM

Without a calculator, work out:
$$(4 \times 10^8) \div (8 \times 10^{-3})$$

PROOF/ SHOW THAT/ CONGRUENCE

M is the midpoint of AD.
Prove that triangle AMB is
congruent to triangle DMC.

Not to scale

COORDINATE GEOMETRY

a) Find the midpoint of AB, given:
$$A(2, 7) \text{ and } B(5, 13).$$

b) Hence find the equation of the line which is perpendicular to AB and goes through the mid-point.

ESTIMATION AND BOUNDS

a) Estimate:
$$\frac{25.7 \times 234}{0.49}$$

b) A number y, rounded to two significant figures is 260. Write down the error interval for y.

PROBABILITY/ COMBINATIONS

A bag contains 12 green and 8 red sweets. Julie takes a sweet at random, eats it, then takes a second sweet and eats it.

a) Draw a tree diagram to show her choices.
b) What is the probability she eats one of each colour.

QUADRATICS/ INEQUALITIES

Sketch the graph of:
$$y = x^2 - 6x + 8$$
Label where it crosses the y-axis, the x-axis and the coordinate of the vertex (turning point).

SIMULTANEOUS EQUATIONS

Solve:
$$y = x^2 - x - 6$$
$$y = 6 - 2x$$

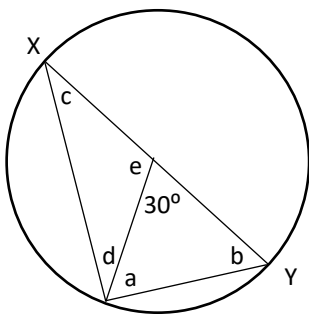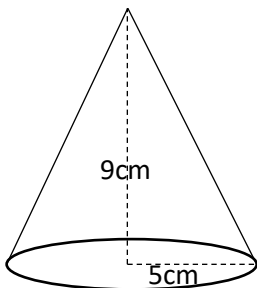| **RATIO AND PROPORTION**	**SIMPLIFY/ RE-ARRANGE/ SOLVE**
A is directly proportional to the square of B. When A = 144, B = 6. a) Find an equations for A in terms of B. b) Find A when B = 8 c) Find B when A = 36	Make x the subject: $$y = \frac{3x + 4}{x - 3}$$
ANGLES & CIRCLE THEOREMS	**SURDS**
Given that the line XY is the diameter of the circle. Find the size of a, b, c, d and e. 	a) Expand $5(2 + \sqrt{3})$ b) Hence, rationalise $\frac{5}{2 - \sqrt{3}}$
AREA/ PERIMETER/ VOLUME	**FRACTIONS/ DECIMALS/ RECURRING DECIMALS**
Find the volume of the cone. 	Work out: $$5\frac{2}{3} + 2\frac{3}{7}$$
TRIGONOMETRY/ GRAPHS	**PERCENTAGES**
Find x. 	The price of an insurance policy has increase by 14% to £91.20, what was the original price?
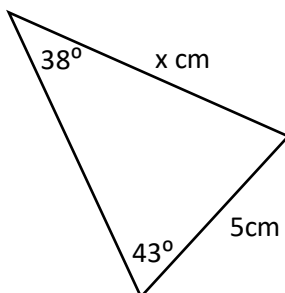
TRANSFORMATIONS

a) Reflect the shape A in the y axis, label it B.

b) Reflect shape B in the line y = 1, label it C.

c) Describe the single transformation that would move shape A to shape C.
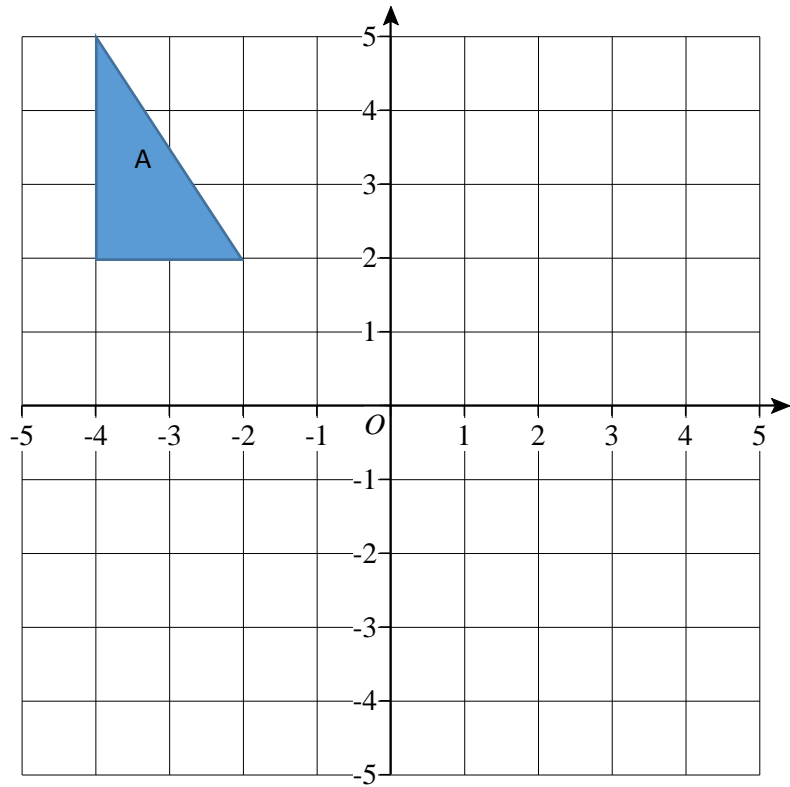
GRAPHS AND CHARTS (HISTOGRAM,CUMULATIVE FREQUENCY ETC)

All the students in a school had a test.
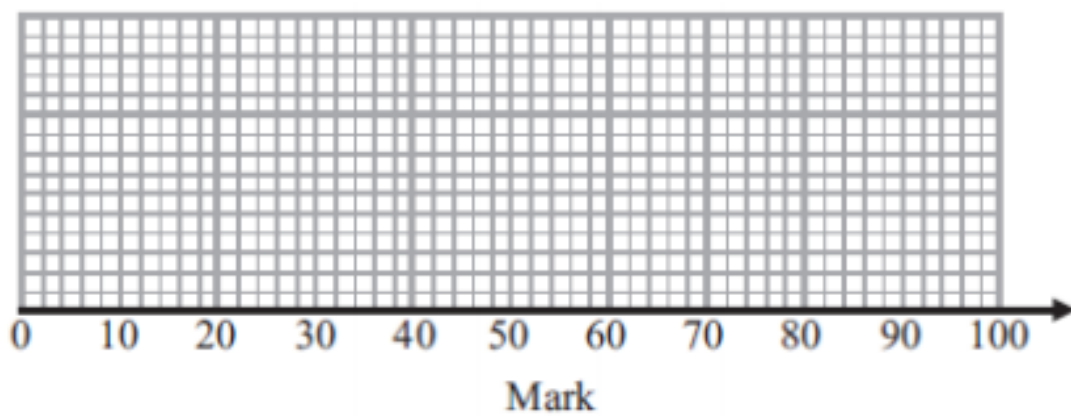
The lowest mark was 18
The highest mark was 86.
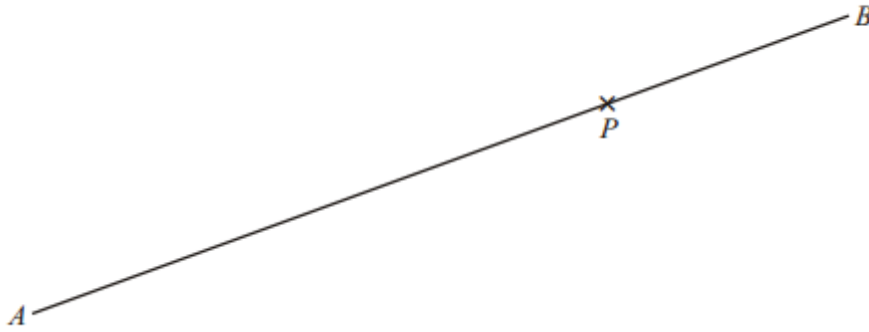The median was 57.
The lower quartile was 32.
The interquartile range was 38.

On the grid draw a box plot to show this information.

Mark

LOCI/CONSTRUCTIONS
Construct the perpendicular to the line segment AB that passes through the point P.

B

×
P

A

ALGEBRAIC GRAPHS – INCLUDING REGIONS, SOLVING AND TRANSFORMING

The grid shows the graph of:
$$y = x^2$$

a) Sketch the graph of:
$$y = x^2 - 2$$

b) Sketch the graph of:
$$y = (x - 2)^2$$