

PLACE VALUE, ROUNDING AND ESTIMATING

a) What is the place value of 5 in?

i) 2531.7

ii) 3.5

b) Estimate

$$\frac{31.7 \times 416.5}{18.6}$$

TYPES OF NUMBER

25, 26, 27, 28, 29

Which number above is:

- a) A multiple of 7?
- b) A square number?
- c) A prime number?
- d) A cube number?
- e) A factor of 52?

ARITHMETIC INCLUDING DECIMALS

a) Put in order smallest first

3.17 3.107 3.1 3.017 3.177

b) Work out $221 \div 17$

NUMBER SQUARES

a) Find the next two terms in this sequence
1, 3, 6, 10,

b) Find the nth term 2, 7, 12, 17, ...

c) The nth term of a sequence is $n^2 + 3$, find the 5th term.

FRACTIONS

Work out

a) $\frac{7}{8} - \frac{2}{3}$

b) $\frac{7}{8} \div \frac{2}{3}$

PERCENTAGES

a) James scored 18 out of 40 in a test. What percentage is this?

b) Complete the table

| Fraction | Decimal | % |
|---------------|---------|-----|
| $\frac{3}{5}$ | | |
| | | 48% |
| $\frac{1}{8}$ | | |

NEGATIVES/CALC/BIDMAS/INDICES

a) Calculate – give your answer to two decimal places.

$$\sqrt{\frac{3.7^2 + 1.9}{2.3^3}}$$

b) Put brackets in, to make this calculation correct.

$$5 + 2 \times 5^2 = 105$$

c) Work out $(-3)^2$

RATIO

a) Simplify the ratio
240:360

b) 8 pens cost £9.92, 6 pens cost £7.50.
Which is better value? Show your working.

SIMPLIFY ALGEBRA/ SUBSTITUTION

a) Simplify $6p - 4q + q - 3p$.

b) Simplify $\frac{p^8}{p^2}$

c) If $x = 5$ work out the value of $3x^2$

ALGEBRA BRACKETS

a) Expand $2y(y - 5)$

b) Factorise $6g + 9$

c) Expand $(x - 5)(x + 3)$

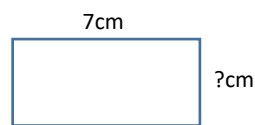
SOLVE EQUATIONS

a) Solve $\frac{x}{3} + 4 = 12$

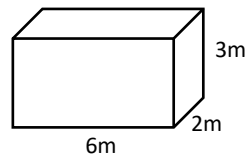
b) Solve $2(2x + 4) = 22$

AREA/ PERIMETER/ VOLUME

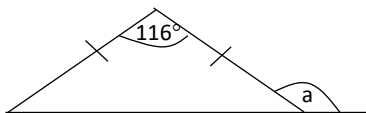
a) This rectangle has perimeter 23cm. find the width.



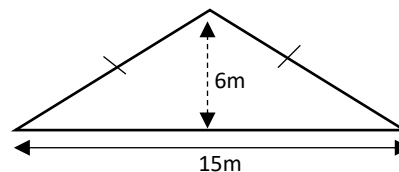
b) Calculate the volume of the cuboid.

**ANGLES**

a) Calculate angle a.

b) A regular polygon has exterior angle 45° . How many sides does it have?**CIRCLES/ PYTHAGORAS/MEASURES/ SPEED**

a) Calculate the length of y to 1dp.



b) A car travels 224km in 3hrs 30mins. Calculate its average speed.

AVERAGES

| Shoe size | Frequency |
|-----------|-----------|
| 5 | 8 |
| 6 | 12 |
| 7 | 7 |
| 8 | 3 |

a) Give the modal shoe size.

b) Give the range of shoe sizes.

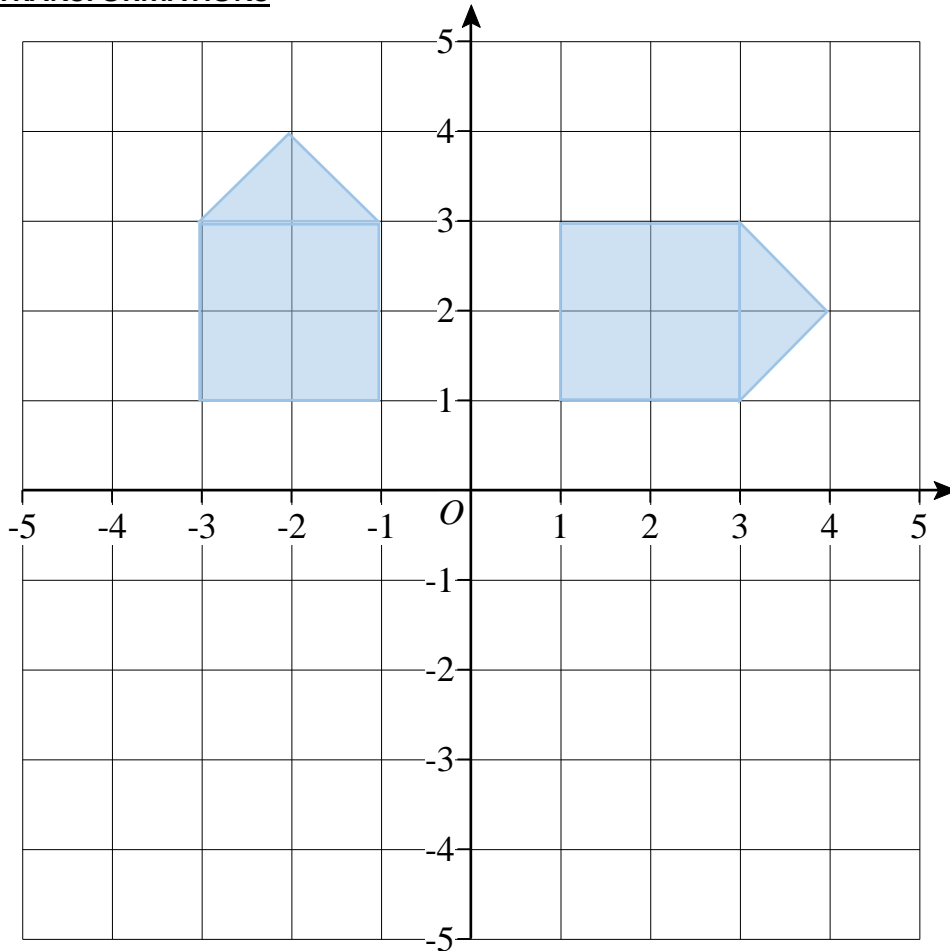
c) Work out the mean shoe size.

NEW CONTENT MISCELLANEOUSa) Write as an ordinary number.
 3.6×10^5

1.2×10^{-7}

b) Using trigonometry calculate angle a to the nearest whole number.

TRANSFORMATIONS



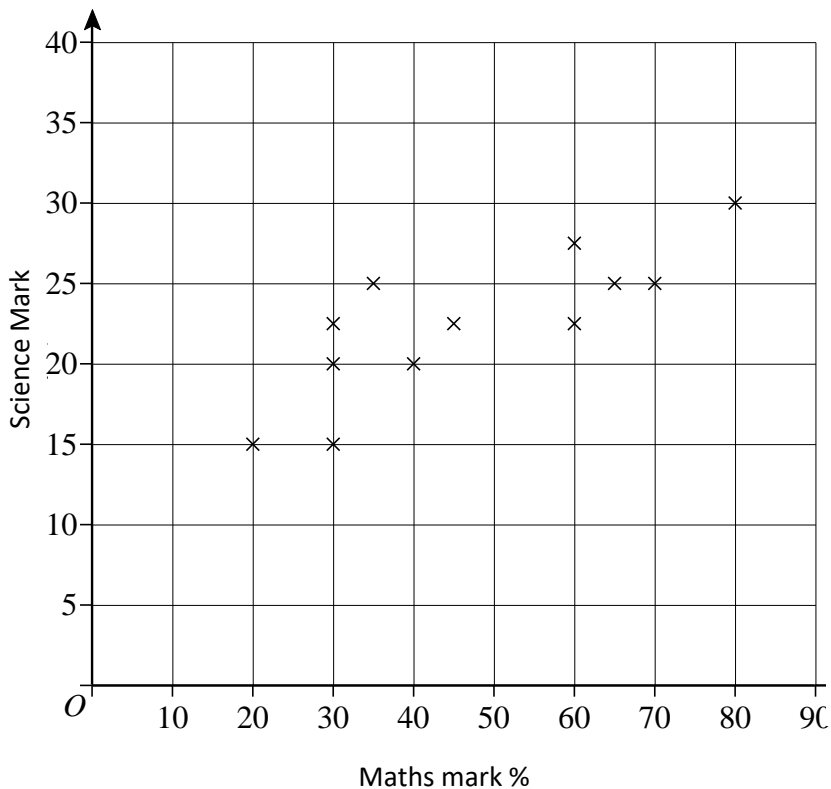
a) Describe the single transformation to get from A to B.

b) Reflect A in the x-axis. Label it C.

c) Translate A $\begin{pmatrix} 5 \\ -4 \end{pmatrix}$. Label it D.

STATISTICAL DIAGRAMS/ PROBABILITY

Below is a scatter graph showing the Maths and Science test scores for 12 students.



a) State the correlation.

b) Describe the relationship.

c) Draw a line of best fit and use it to predict the Science score of a student if they scored 50% in Maths.

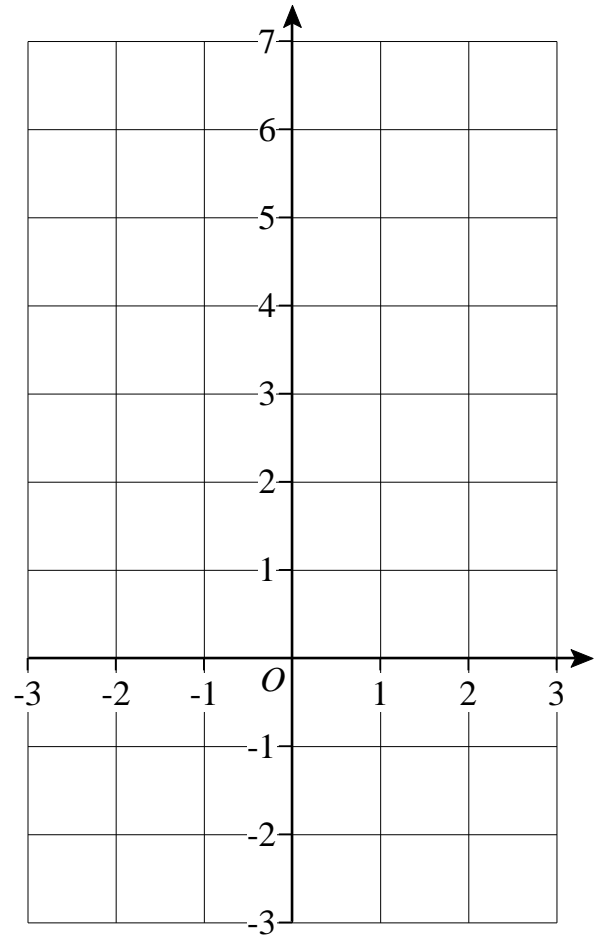
GRAPHS

a) Complete the table for $y = x^2 - 2$.

| | | | | | | | |
|---|----|----|----|---|---|---|---|
| x | -3 | -2 | -1 | 0 | 1 | 2 | 3 |
| y | | | | | | | |

b) Draw the graph of $y = x^2 - 2$.

c) Use the graph to solve the equation $x^2 - 2 = 5$.



CONSTRUCTIONS

Construct using a compass, a triangle with sides of length 7cm, 6cm and 5cm.

Construct the angle bisector of angle BAC.

