



<p><u>PLACE VALUE, ROUNDING AND ESTIMATING</u></p> <p>a) Round 735923</p> <p>i) to the nearest 100</p> <p>ii) to two significant figures</p> <p>iii) Round 371.59 to 1 decimal place</p>	<p><u>TYPES OF NUMBER</u></p> <p>Write 180 as a product of prime factors.</p>
<p><u>ARITHMETIC INCLUDING DECIMALS</u></p> <p>Work out 3.17×2.9</p>	<p><u>NUMBER SQUARES</u></p> <p>a) Find the nth term 5, 11, 17, 23,</p> <p>b) Given the nth term of a sequence is $4n + 3$, give the first three terms.</p>
<p><u>FRACTIONS</u></p> <p>Work out</p> <p>a) $\frac{2}{9} + \frac{1}{3}$</p> <p>b) $1\frac{2}{5} \times \frac{3}{4}$</p>	<p><u>PERCENTAGES</u></p> <p>a) Calculate 14.7% of 3540</p> <p>b) Put in order smallest first $\frac{3}{5}$ $\frac{2}{3}$ 0.63 $\frac{11}{20}$ $\frac{33}{50}$</p>
<p><u>NEGATIVES/CALC/BIDMAS/INDICES</u></p> <p>a) Work out:</p> <p>-3 \times -5 -3 + -5 -3 - -5</p> <p>b) Write as a power of 5</p> $\frac{5^4 \times 5^3}{5^2}$	<p><u>RATIO</u></p> <p>The ratio of boys to girls in a school is 3:2. There are 1200 students in the school. How many are girls?</p>

SIMPLIFY ALGEBRA/ SUBSTITUTION

- a) Simplify $3x + 5y - 2x - 7y$
- b) $p^5 \times p^3$
- c) If $x = -3$ work out the value of $x^2 - 2x$

ALGEBRA BRACKETS

- a) Expand $3(2p + 5)$
- b) Factorise $x^2 - 3x$
- c) Expand $(x + 7)(x - 3)$

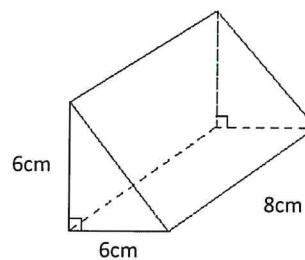
SOLVE EQUATIONS

Solve

- a) $3a + 9 = 27$
- b) $5a - 8 = 3a + 5$

AREA/ PERIMETER/ VOLUME

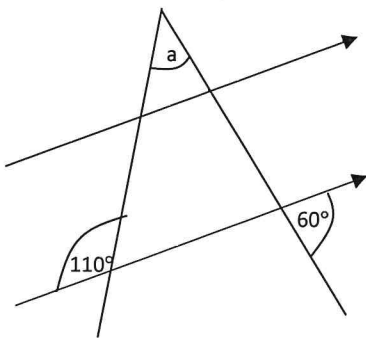
- a) Calculate the volume:



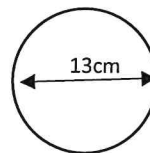
- b) A cube has sides 3cm. Calculate its total surface area.

ANGLES

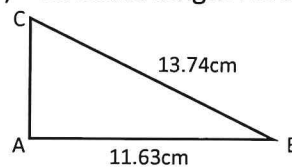
Calculate angle a.

**CIRCLES/ PYTHAGORAS/MEASURES/ SPEED**

- a) Calculate its area to 1dp.



- b) Calculate length AC to 2dp.

**AVERAGES**

Weight(kg)	Frequency		
$50 < w \leq 60$	7		
$60 < w \leq 70$	13		
$70 < w \leq 80$	15		
$80 < w \leq 90$	5		

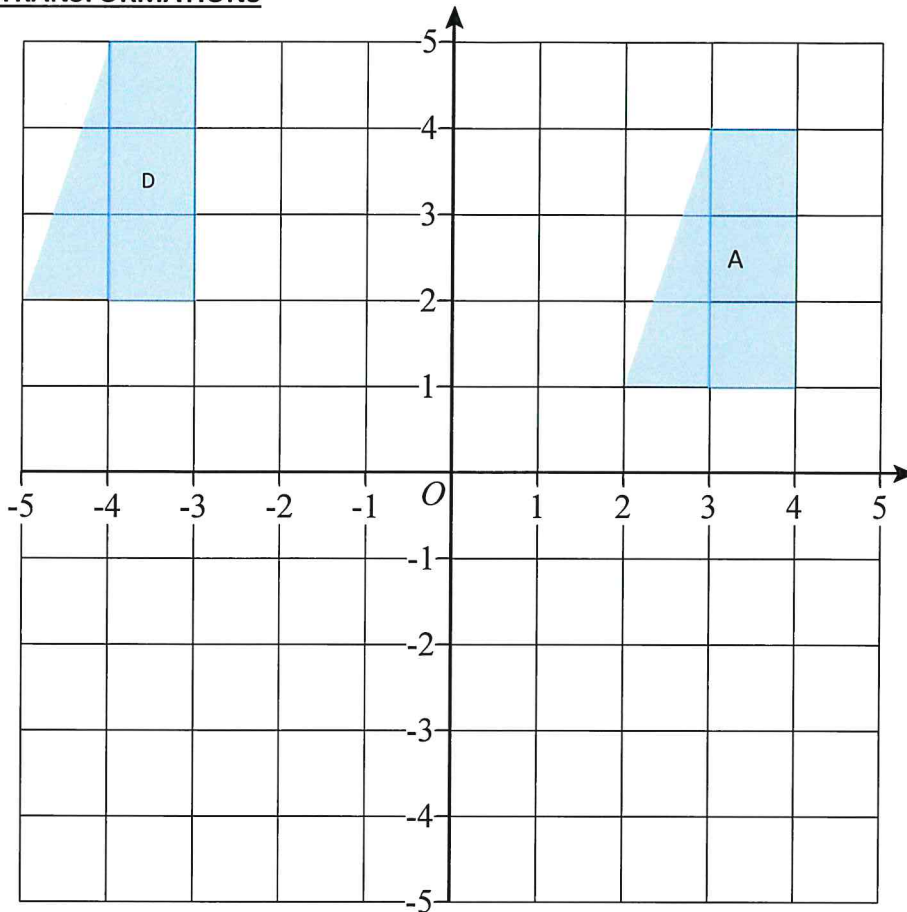
- a) Modal group
- b) Mean =

NEW CONTENT MISCELLANEOUS

- a) Write in standard form
3450000

0.000000017
- b) Work out 5^{-2}
- c) A door was 2.7m to 1dp. Complete the error interval.
_____ $\leq h <$ _____

TRANSFORMATIONS

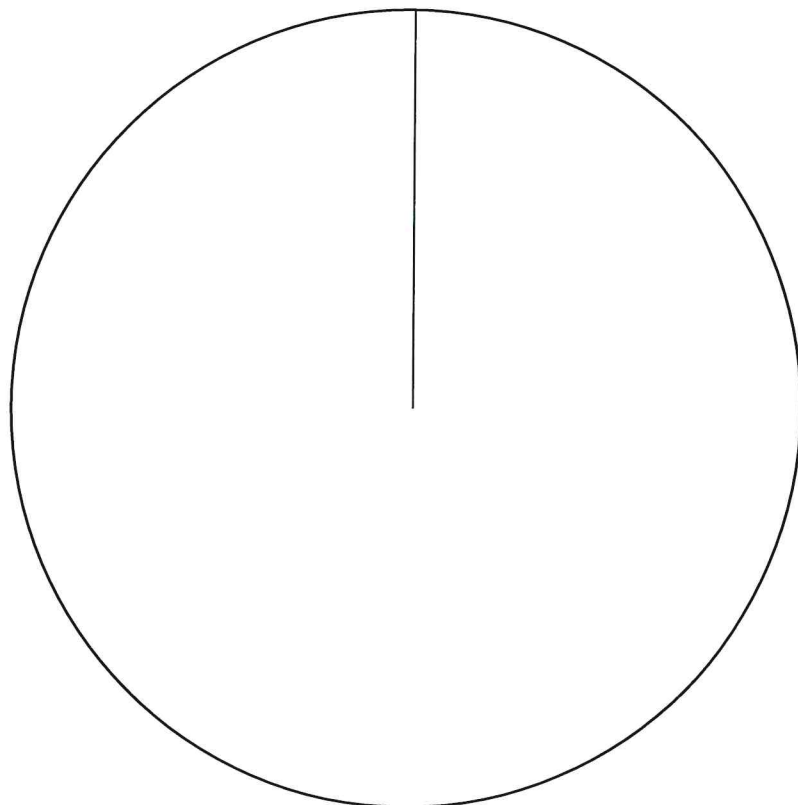


- Reflect A in the line $x = 1$. Label it B.
- Rotate A 90° clockwise centre $(-1, 1)$. Label it C.
- Describe the single transformation to get from A to D.

STATISTICAL DIAGRAMS/ PROBABILITY

Draw a pie chart for this data.

Favourite colour	Frequency
Blue	27
Red	42
Yellow	30
Green	15
Pink	6

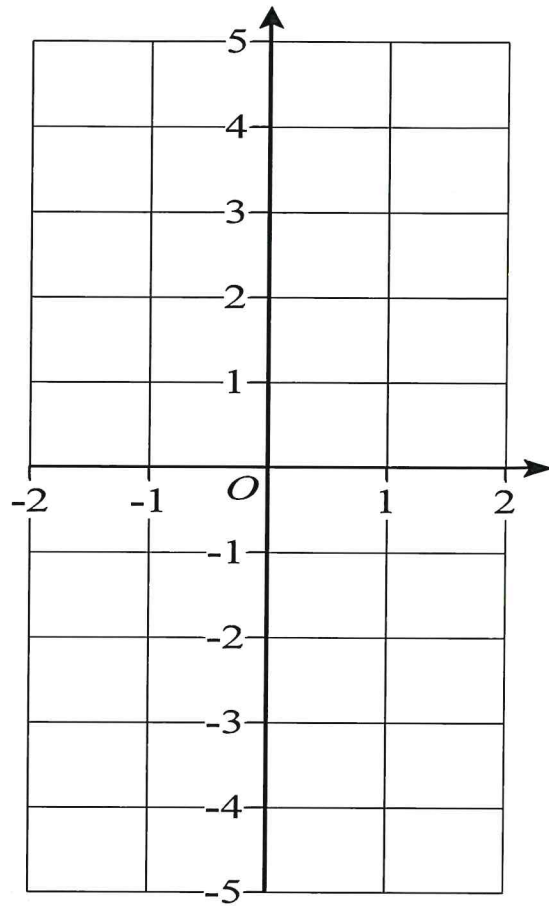


GRAPHS

- a) Draw the graph of $y = 3x - 2$ by completing the table below:

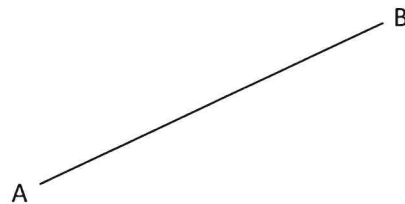
x	-2	-1	0	1	2
y					

- b) Solve the equation $3x - 2 = 2$ Use the graph to help.



CONSTRUCTIONS

Shade the region which is closer to B than A and is less than 5cm from A. Show your construction lines.





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

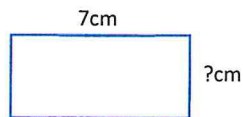
SOLVE EQUATIONS

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

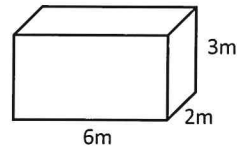
b) Solve $2(2x + 4) = 22$

AREA/ PERIMETER/ VOLUME

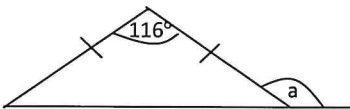
a) This rectangle has perimeter 23cm. find the width.



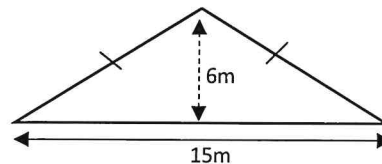
b) Calculate the volume of the cuboid.

**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.

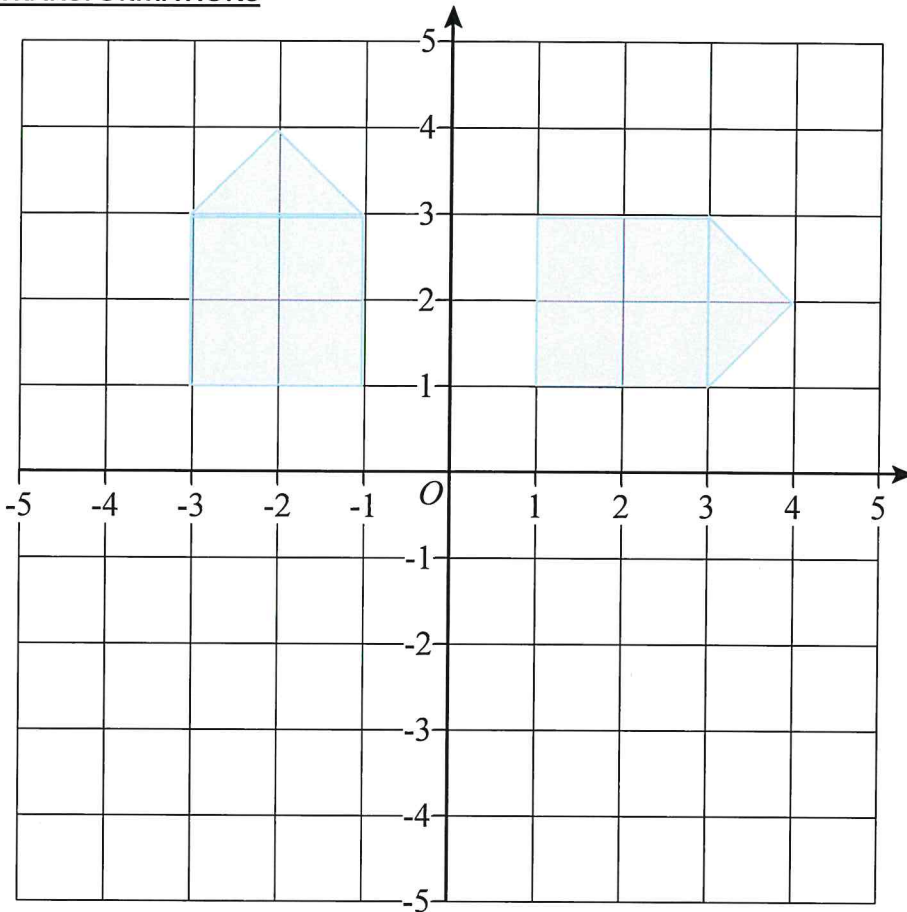
c) Work out the mean shoe size.

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



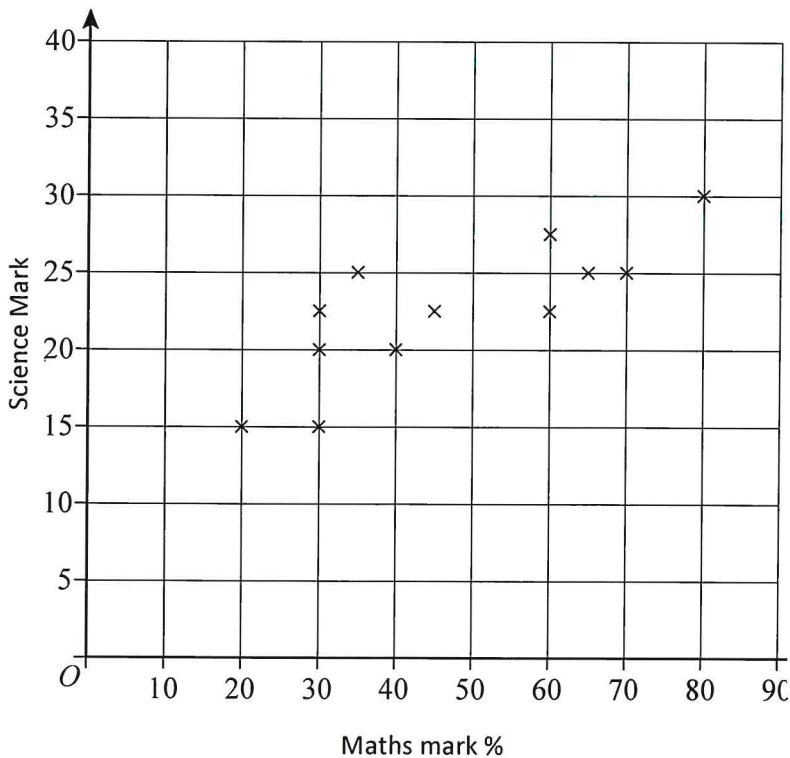
a) Describe the single transformation to get from A to B.

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.

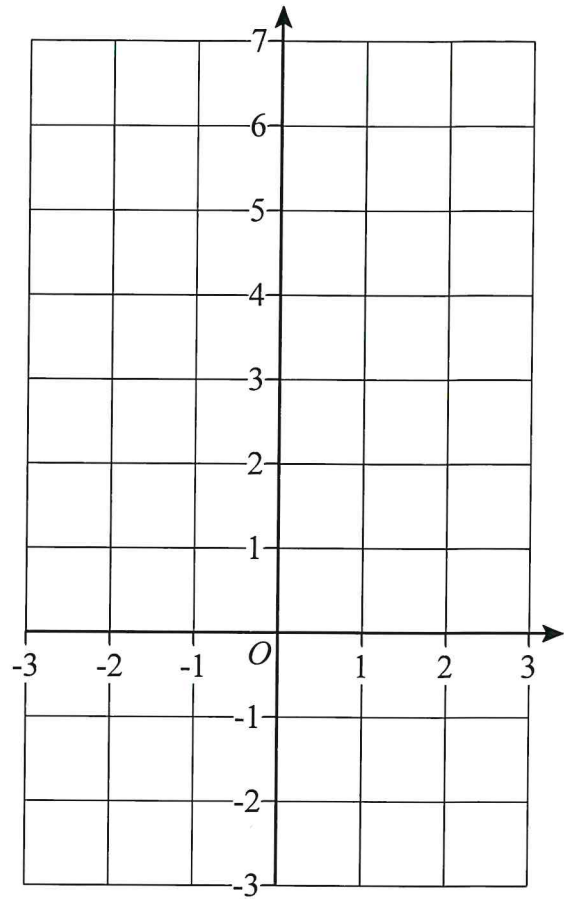
GRAPHS

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

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

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

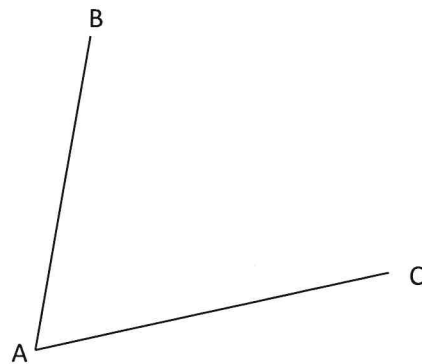
c) Use the graph to solve the equation $x^2 - 2 = 5$.




CONSTRUCTIONS

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

Construct the angle bisector of angle BAC.





<p><u>PLACE VALUE, ROUNDING AND ESTIMATING</u></p> <p>a) Round 371.59823 to</p> <p>i) 2 decimal places.</p> <p>ii) 1 significant figure.</p> <p>b) Estimate 31.7×159.6</p>	<p><u>TYPES OF NUMBER</u></p> <p>Find the LCM and HCF of 24 and 40.</p>
<p><u>ARITHMETIC INCLUDING DECIMALS</u></p> <p>a) $6.38 + 17.9$</p> <p>b) $\pounds 18.48 \div 8$</p>	<p><u>NUMBER SQUARES</u></p> <p>a) Draw pattern number 4.</p>  <p>b) Calculate the nth term of the number of dots in the pattern above.</p> <p>c) Find the 20th term (how many dots)?</p>
<p><u>FRACTIONS</u></p> <p>Work out</p> $1\frac{2}{3} + 2\frac{4}{5}$	<p><u>PERCENTAGES</u></p> <p>a) In a sale a TV of price $\pounds 450$ was reduced by 16%. Calculate the sale price.</p> <p>b) Write 3.4% as a decimal.</p> <p>c) Write 92% as a fraction in its simplest form.</p>
<p><u>NEGATIVES/CALC/BIDMAS/INDICES</u></p> <p>a) Without a calculator work out.</p> 11^2 5^3 $\sqrt{225}$ <p>cube root of 8</p> <p>b) What is the reciprocal of 7?</p> <p>c) Work out $\frac{-15+-3}{-4--2}$</p>	<p><u>RATIO</u></p> <p>Fruit juice is made by orange, apple and lemon juice in the ratio 4:3:1. I have 2 litres of the fruit juice. How much of this is apple juice? Give your answers in millilitres.</p>

SIMPLIFY ALGEBRA/ SUBSTITUTION

a) Simplify $6a + 2a$
 $6a \times 2a$

b) If $a = 4$ and $b = 7$, work out the value of
 $6a + 8b$

ALGEBRA BRACKETS

a) Expand $3(5 + 2r)$

b) Factorise fully $4p^2 + 8p$

c) Expand $(x - 6)(x - 4)$

SOLVE EQUATIONS

Solve

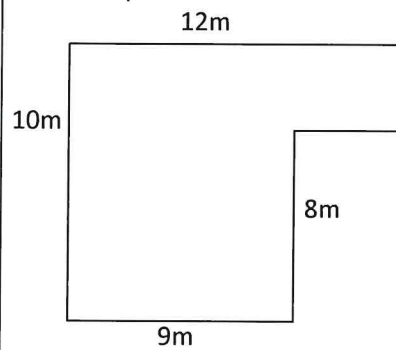
a) $a - 17 = 35$

b) $\frac{b}{4} = 12$

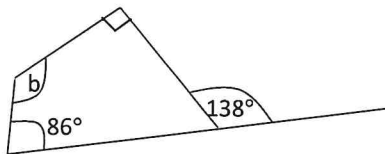
c) $6c - 1 = 4c + 8$

AREA/ PERIMETER/ VOLUME

Find the perimeter and area.

**ANGLES**

a) Calculate angle b .



b) Calculate the interior angle of a regular 9 sided polygon.

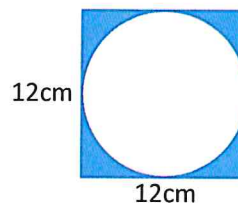
CIRCLES/ PYTHAGORAS/MEASURES/ SPEED

a) Complete these:

$1.35 \text{ kg} = \text{_____ g}$

$260 \text{ cm} = \text{_____ m}$

b) Calculate its shaded area to 1dp.

**AVERAGES**

7, 2, 9, 3, 6, 5, 6, 2, 2, 8

Find the:

a) Mode

b) Range

c) Median

d) Mean

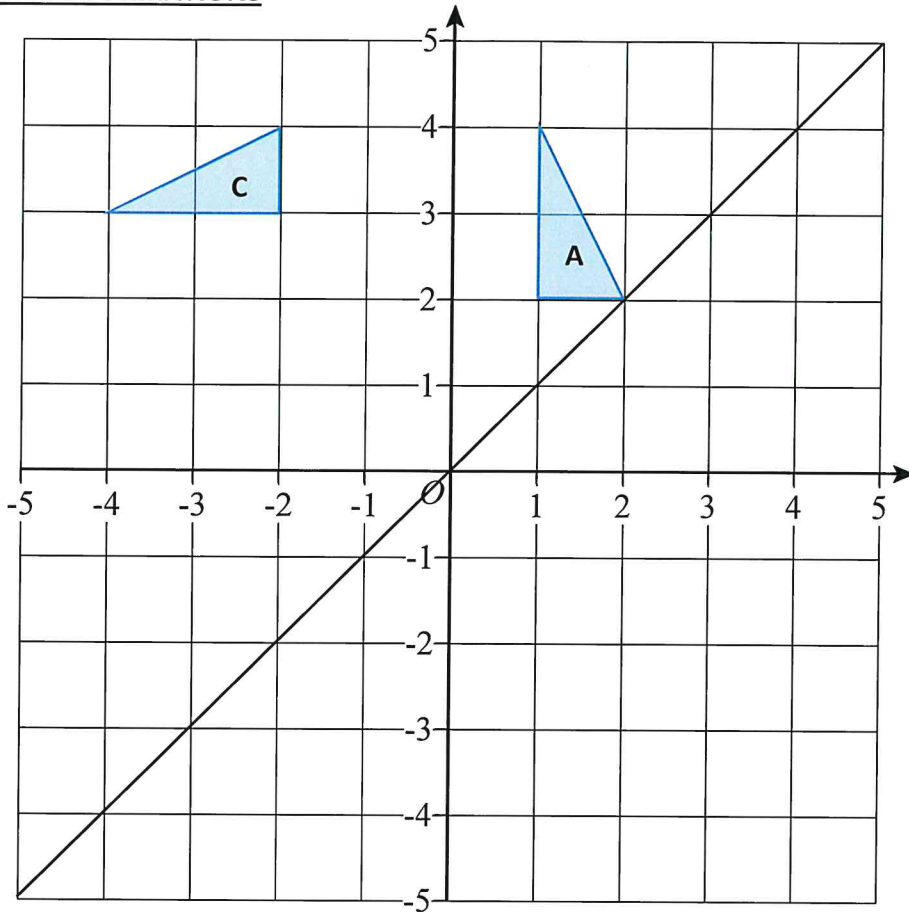
NEW CONTENT MISCELLANEOUS

3 apples and 2 bananas cost 94p

4 apples and 1 banana cost 97p

By solving simultaneous equations. Find the cost of one apple and one banana.

TRANSFORMATIONS



a) Reflect A in the line m. label it B.

b) Describe the single transformation to get from A to C.

c) Translate A $\begin{pmatrix} -3 \\ -6 \end{pmatrix}$. Label it D.

STATISTICAL DIAGRAMS/ PROBABILITY

a) Which way to school is the mode?

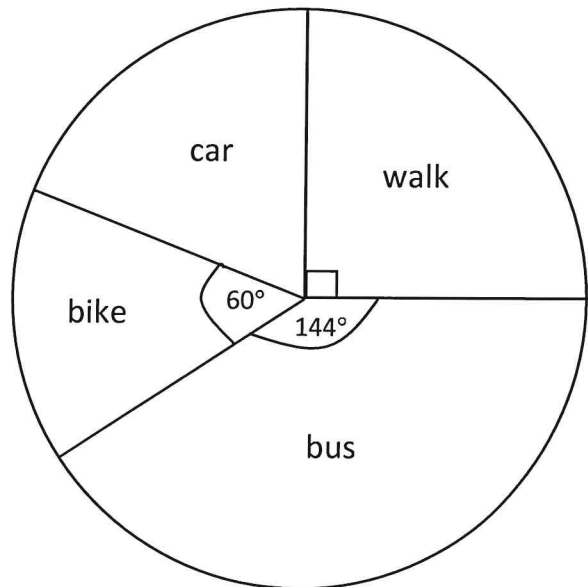
Pie Chart showing how to get to school

b) 240 students were asked altogether?
How many of these students chose to walk?

Why?

c) Calculate the angle for car.

d) How many students chose to travel by:
i) bike? ii) bus?

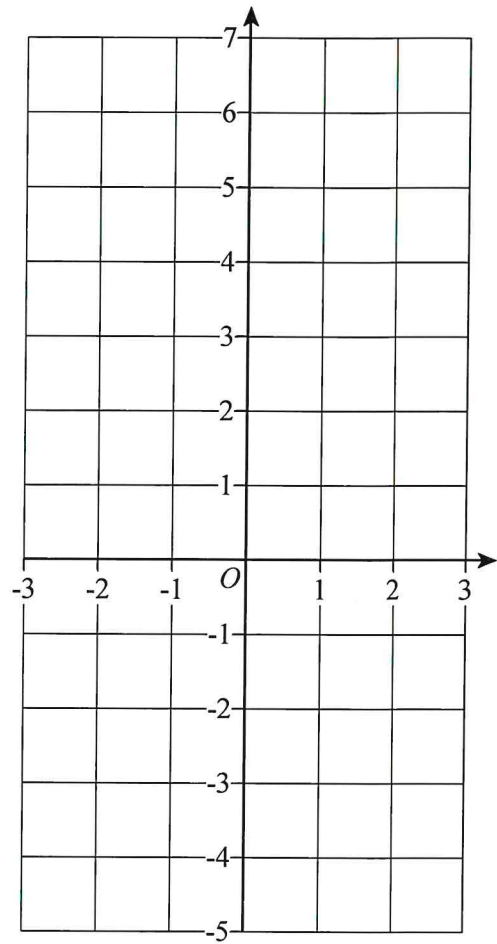


GRAPHS

- a) Draw the graph of $y = 2x + 1$ by completing the table below

x	-3	-2	-1	0	1	2	3
y			-1			5	

- b) Find the value of x when $y = 4$.



CONSTRUCTIONS

Here is a garden ABCD
The scale is 1cm = 5m.

Grass is to be planted at least 20m from wall AD
and at least 30m from corner B.

Shade the region for the grass to be painted.

