Foundation (Grade 5) GCSE Mini Test 1

1 A car travels a distance of 250 miles in 4 hours and 20 minutes.

Work out the average speed of the car, in miles per hour.

Give your answer to 1 decimal place.

57.7mph

2 A rock has a mass of 114 grams and a density of 1.9 grams/cm^3.

Work out the volume of the rock.

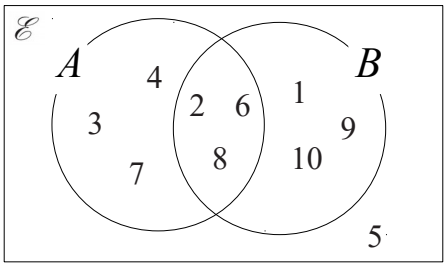
60 cm^3

3 It costs £2.20 to buy 5 apples.

Work out how much it would cost to buy 8 apples.

£3.52

4



$\frac{9}{10}$

A number is chosen at random from the universal set, $\mathscr{E}$. What is the probability that the number is in the set $A \cup B$?

5 Work out $(7.15 \times 10^4) \div (5.5 \times 10^{-7})$

Give your answer in standard form.

1.3 x 10^{11}

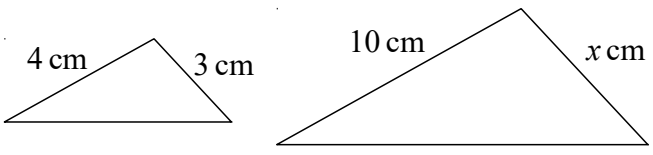
6 Given that $a:b = 4:3$ and $b:c = 5:2$

Find the ratio $a:b:c$

Give your answer in its simplest form.

20 : 15 : 6

7 The triangles are mathematically similar.



Calculate the value of x.

7.5

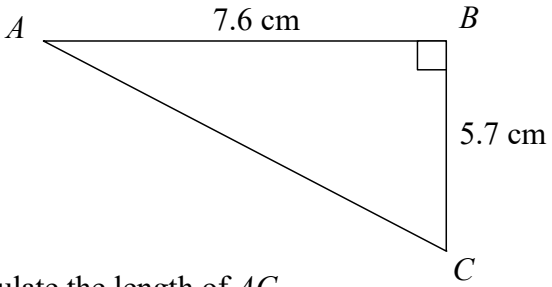
8 Solve the simultaneous equations:

$3x + y = 11$
$2x - 4y = -9$

x = 2.5

y = 3.5

9



Calculate the length of AC.

9.5 cm

10 Lottie bought a house for £350 000.

In the first year the house price increased by 2%

In the second year the house price depreciated by 5%

Work out the value of the house at the end of 2 years.

£339150

11

$\boldsymbol{a} = \begin{pmatrix} -3 \\ 5 \end{pmatrix}$ and $\boldsymbol{b} = \begin{pmatrix} 4 \\ 2 \end{pmatrix}$

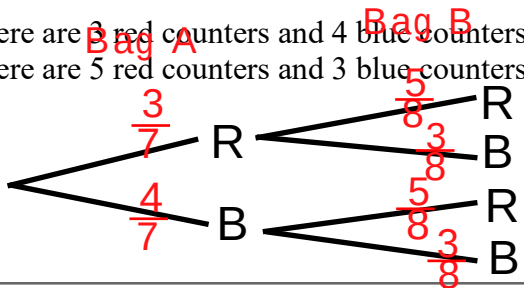
Write down as a column vector $3\mathbf{a} - 2\mathbf{b}$

$$\begin{pmatrix} -17 \\ 11 \end{pmatrix}$$

12

Tina has two bags of counters, Bag A and Bag B.

There are 3 red counters and 4 blue counters in bag A.
There are 5 red counters and 3 blue counters in bag B.



13

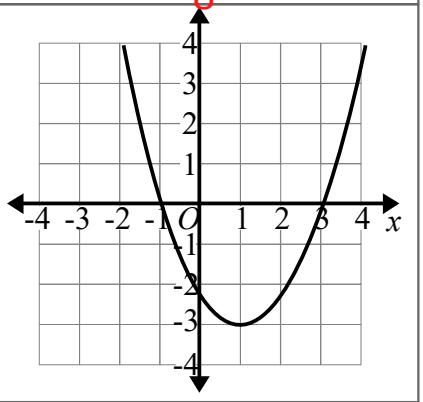
Make a the subject of $v = u + at$

$$a = \frac{v - u}{t}$$

14

Write down the turning point of the graph

$(1, -3)$



15

Expand and Simplify: $9(t - 2) + 3(t - 5)$

$12t - 33$

16

A line passes through the point (0, 8).
The gradient of this line is 3.
Write down the equation of this line.

$y = 3x + 8$

17

In a sale, normal prices are reduced by 25%.
The sale price of the coat is £45

Work out the normal price of the coat.

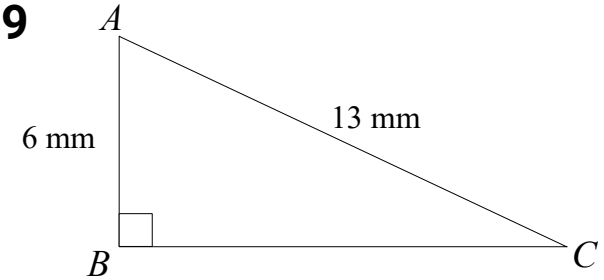
£60

18

Solve: $y^2 + 2y - 35 = 0$

$y = 5$ or $y = -7$

19



Calculate the size of angle ACB.

27.5^0

20

The bearing of A from B is 120°

Find the bearing of B from A.

300^0