



1 Write  $\frac{3}{4}$  as a decimal.

..... [1]

2 Work out \$1.20 as a percentage of \$16.

.....% [1]

3 Factorise  $5y - 6py$ .

..... [1]

4 A bag contains green balls and red balls only.  
A ball is taken at random from the bag.  
The probability of taking a green ball is 0.38 .

Write down the probability of taking

(a) a red ball,

..... [1]

(b) a blue ball.

..... [1]

- 5 (a) On Monday the temperature at midday is  $4^{\circ}\text{C}$  and the temperature at midnight is  $-3^{\circ}\text{C}$ .

Work out the difference between these two temperatures.

.....  $^{\circ}\text{C}$  [1]

- (b) On Wednesday the temperature at midday is  $-1^{\circ}\text{C}$ .  
By 7 pm the temperature has fallen by  $4^{\circ}\text{C}$ .

Work out the temperature at 7 pm.

.....  $^{\circ}\text{C}$  [1]

- 6 The volume of a cuboid is  $180\text{ cm}^3$ .  
The base is a square of side length 6 cm.

Calculate the height of this cuboid.

..... cm [2]

- 7 Write the following numbers in standard form.

(a) 640 000

..... [1]

(b) 0.0006

..... [1]

8 Work out.

(a)  $\begin{pmatrix} 4 \\ -2 \end{pmatrix} - \begin{pmatrix} 1 \\ 5 \end{pmatrix}$

$$\begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix} \quad [1]$$

(b)  $6 \begin{pmatrix} 3 \\ 0 \end{pmatrix}$

$$\begin{pmatrix} \phantom{0} \\ \phantom{0} \end{pmatrix} \quad [1]$$

9 Asif and Ben share \$2100 in the ratio Asif : Ben = 3 : 7.

Work out how much Asif receives.

\$ ..... [2]

10 The length of a truck,  $L$  metres, is 8.2 m, correct to 1 decimal place.

Complete this statement about the value of  $L$ .

.....  $\leq L <$  ..... [2]

11 Simplify.

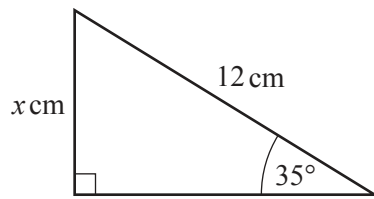
(a)  $t^{21} \div t^7$

..... [1]

(b)  $(u^5)^5$

..... [1]

12



NOT TO SCALE

The diagram shows a right-angled triangle.

Calculate the value of  $x$ .

$x =$  ..... [2]

13

$$p = \frac{1.6 + 9.6^2}{5.9 - 4.3}$$

(a) By writing each number correct to 1 significant figure, work out an estimate for  $p$ .  
You must show all your working.

..... [2]

(b) Calculate the exact value of  $p$ .

..... [1]

14                                  27                  28                  29                  30                  31                  32                  33

From the list of numbers, write down

(a) a multiple of 7,

..... [1]

(b) a cube number,

..... [1]

(c) a prime number.

..... [1]

15 **Without using a calculator**, work out  $\frac{5}{6} + \frac{2}{3}$ .

You must show all your working and give your answer as a mixed number in its simplest form.

..... [3]

16 These are the first four terms of a sequence.

5                  8                  11                  14

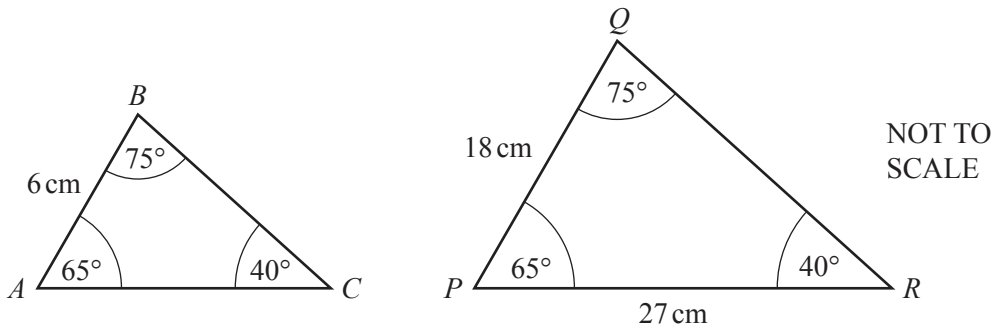
(a) Write down the next term.

..... [1]

(b) Find an expression, in terms of  $n$ , for the  $n$ th term.

..... [2]

17



- (a) Explain why triangle  $ABC$  and triangle  $PQR$  are similar.

.....  
 ..... [1]

- (b) Find  $AC$ .

$AC = \dots\dots\dots\text{ cm}$  [2]

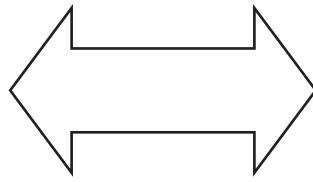
- 18 A car travels at a constant speed of  $20\text{ m/s}$ .

Work out the time it takes for the car to travel  $10\text{ km}$ .  
 Give your answer in minutes and seconds.

..... minutes ..... seconds [3]

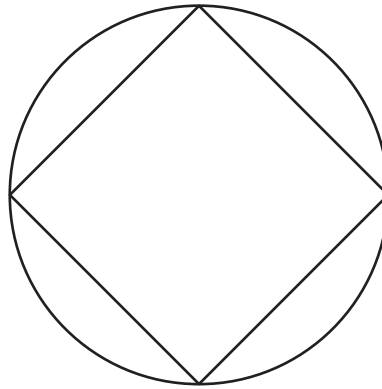
19 (a) On each shape, draw all the lines of symmetry.

(i)



[1]

(ii)



[2]

(b) Write down the name of a quadrilateral that has

- rotational symmetry of order 2
- and
- exactly two lines of symmetry.

..... [1]



20 (a) Change 3670 centimetres to metres.

..... m [1]

(b) The scale drawing shows the positions of town *S* and town *T*.  
The scale is 1 centimetre represents 15 kilometres.



Scale: 1 cm to 15 km

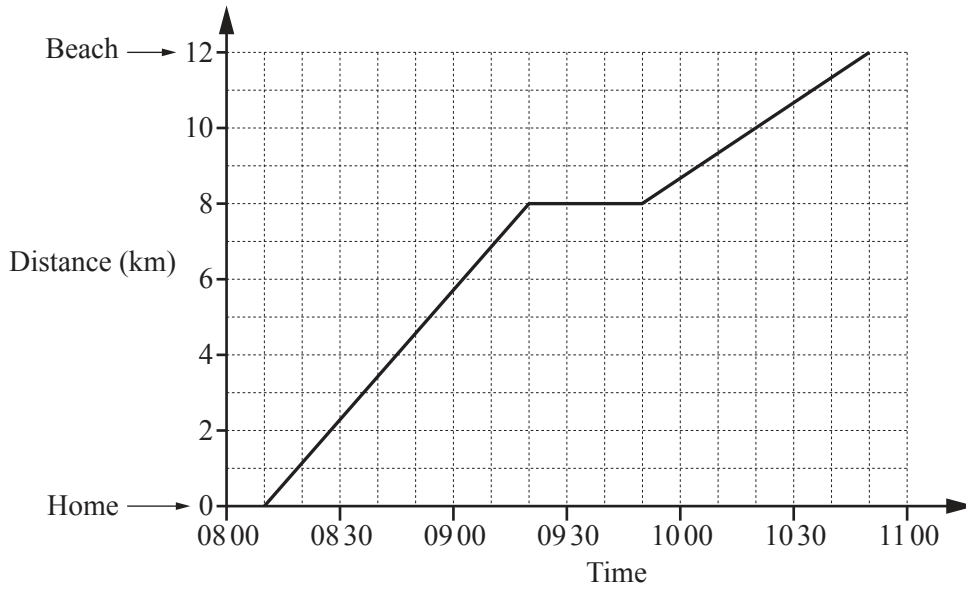
(i) Find the actual distance between these two towns.

..... km [2]

(ii) Measure the bearing of town *T* from town *S*.

..... [1]

21 The travel graph shows Michael’s journey from his home to the beach.



(a) At what time did he start his journey?

..... [1]

(b) On the journey he stopped for a rest.

(i) Find the distance he was from home when he stopped for a rest.

..... km [1]

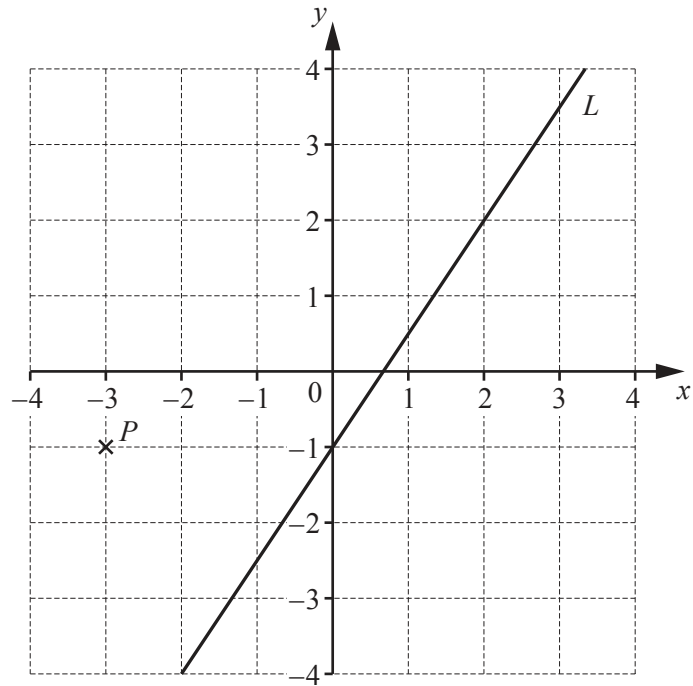
(ii) For how many minutes did he stop?

..... min [1]

(c) Explain how the graph shows that Michael travelled faster before he stopped than after he stopped.

..... [1]

22 The diagram shows a point  $P$  and a line  $L$ .



(a) Write down the co-ordinates of point  $P$ .

(....., .....) [1]

(b) Find the gradient of line  $L$ .

..... [2]

(c) Write down the equation of line  $L$  in the form  $y = mx + c$ .

$y =$  ..... [2]

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