



- 1 Write seventeen thousand and seventeen in figures.

..... [1]

- 2 Find the number of minutes from 17 58 to 7.13 pm.

..... min [1]

- 3 The number of cars parked in a car park at 9 am is recorded for 10 days.

124      130      129      116      132      120      127      107      118      114

Complete the stem-and-leaf diagram.



Key: 12|3 represents 123 cars

[2]

- 4 (a) Write 6789 correct to the nearest 100.

..... [1]

- (b) Write 6789 correct to 3 significant figures.

..... [1]

- 5 A cuboid measures 6 cm by 3 cm by 2 cm.

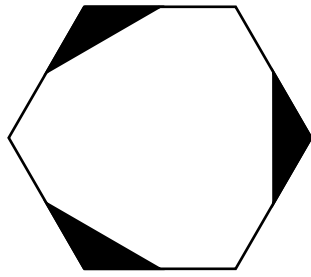
On this  $1\text{ cm}^2$  grid, draw a net of the cuboid.



[3]

4

6



(a) Write down the order of rotational symmetry of the shape.

..... [1]

(b) Draw all the lines of symmetry on the shape.

[1]

7 (a) Write down a fraction which is equivalent to  $\frac{3}{5}$ .

..... [1]

(b) Write down the reciprocal of 7.

..... [1]

8 A cube has a volume of  $1000 \text{ cm}^3$ .

Calculate the surface area of the cube.

.....  $\text{cm}^2$  [3]

9 Dan either walks or cycles to school.

The probability that he cycles to school is  $\frac{1}{5}$ .

(a) Write down the probability that Dan walks to school.

..... [1]

(b) There are 200 days in a school year.

Work out the expected number of days that Dan cycles to school in a school year.

..... [1]

- 10** Using a ruler and pair of compasses only, construct a triangle with sides 5 cm, 8 cm and 10 cm.  
Leave in your construction arcs.

[2]

- 11** Here is a list of numbers.

Put a ring around the number with the largest value.

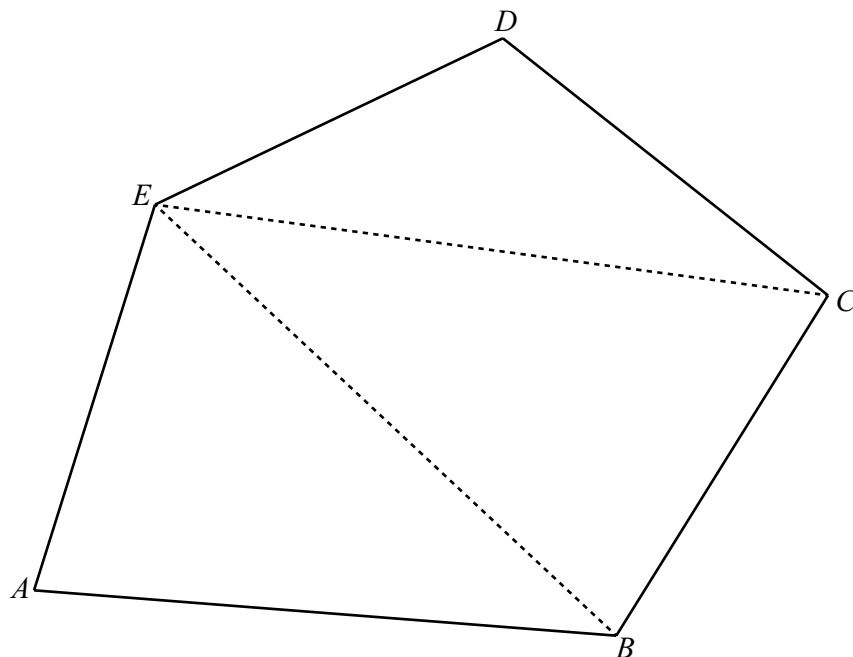
0.3030       $\frac{1}{3}$       0.0330       $\frac{3}{10}$       33%      [1]

- 12** Complete these statements.

(a) 6 m is the same length as ..... mm. [1]

(b) 7000 cm<sup>2</sup> is the same area as ..... m<sup>2</sup>. [1]

13



$ABCDE$  is a pentagon.

Explain why the diagram shows that the sum of the interior angles of a pentagon is  $540^\circ$ .  
Do not measure any angles.

..... [1]

14 Simplify  $x^3y^4 \times x^5y^3$ .

..... [2]

15 Write 2020 in standard form.

..... [1]

16 Kim knows that one angle of an isosceles triangle is  $48^\circ$ .  
He says that one of the other angles **must** be  $66^\circ$ .

Explain why Kim is wrong.

.....  
..... [2]

- 17 Explain why  $\sqrt{3}$  is irrational.

..... [1]

- 18 The mass,  $m$  kilograms, of a horse is 429 kg, correct to the nearest kilogram.

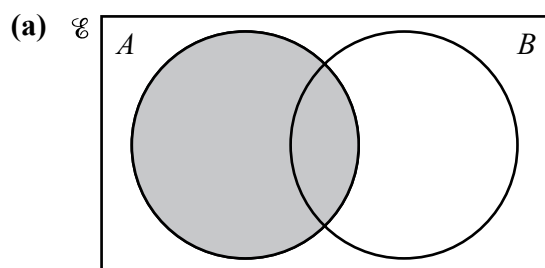
Complete this statement about the value of  $m$ .

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

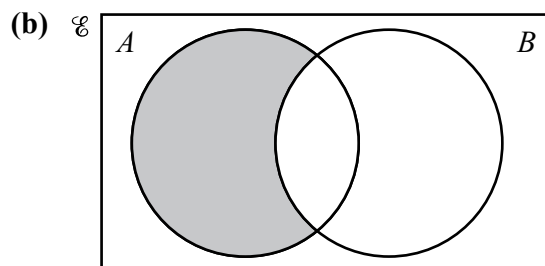
- 19 Rearrange the formula  $5w - 3y + 7 = 0$  to make  $w$  the subject.

$w =$  ..... [2]

- 20 Use set notation to describe the shaded regions in each Venn diagram.



..... [1]



..... [1]

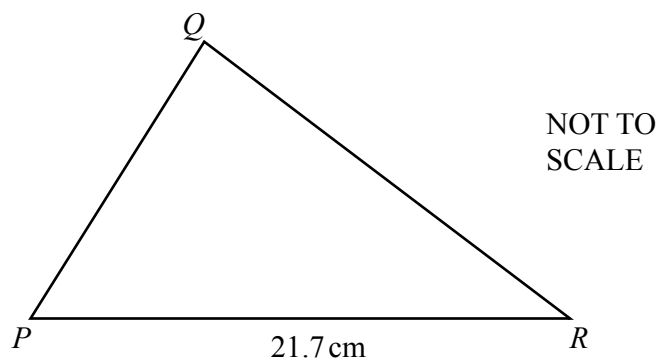
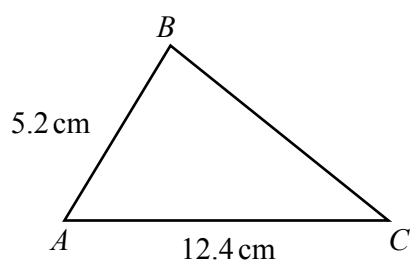
- 21 The radius of a sphere is 5.2 cm.

Work out the surface area of this sphere.

[The surface area,  $A$ , of a sphere with radius  $r$  is  $A = 4\pi r^2$ .]

.....cm<sup>2</sup> [2]

- 22 Triangle  $ABC$  is similar to triangle  $PQR$ .



Find  $PQ$ .

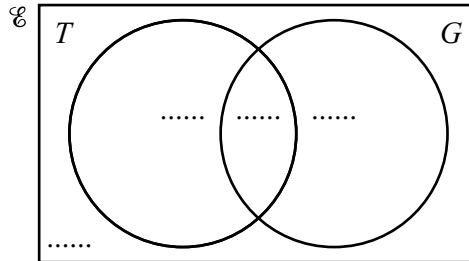
$PQ =$  ..... cm [2]



- 23  $\mathcal{E} = \{\text{children who go to the park}\}$   
 $T = \{\text{children who play tennis}\}$   
 $G = \{\text{children who play golf}\}$

120 children go to the park.  
 50 play tennis.  
 75 play golf.  
 25 do not play tennis or golf.

- (a) Complete the Venn diagram.



[2]

- (b) Find  $n(T \cap G)$ .

..... [1]

- 24 (a) Factorise completely  $18x - 24$ .

..... [1]

- (b) Simplify  $(w^5)^4$ .

..... [1]

- 25** Without using your calculator, work out  $1\frac{7}{12} + \frac{13}{20}$ .

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

..... [3]

- 26** By rounding each number correct to 1 significant figure, estimate the value of  $\sqrt{\frac{90\,006}{10.01^2}}$ .

You must show all your working.

..... [2]

- 27 (a) The  $n$ th term of a sequence is  $n^3 - 5$ .

Write down the first three terms of this sequence.

....., ....., ..... [2]

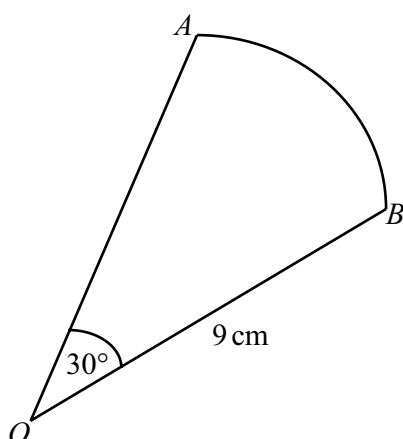
- (b) Here is a sequence of numbers.

3, 6, 11, 18, 27, ...

Find an expression for the  $n$ th term of this sequence.

..... [2]

28



NOT TO  
SCALE

$OAB$  is a sector of a circle with radius 9 cm and centre  $O$ .  
The angle at  $O$  is  $30^\circ$ .

Calculate the area of this sector.  
Give your answer in terms of  $\pi$ .

.....  $\text{cm}^2$  [2]

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