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.

10 .................................................
11 .................................................
12 .................................................
13 .................................................

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]
A cuboid measures 6 cm by 3 cm by 2 cm.

On this 1 cm$^2$ grid, draw a net of the cuboid.
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 cm$^3$.

Calculate the surface area of the cube.

.............................................. 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.

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\(^2\) is the same area as ......................... m\(^2\). [1]
ABCDE is a pentagon.

Explain why the diagram shows that the sum of the interior angles of a pentagon is 540°. Do not measure any angles.

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

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

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

15 Write 2020 in standard form.

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

16 Kim knows that one angle of an isosceles triangle is 48°. He says that one of the other angles must be 66°.

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 \( m \).

\[
\underline{\ldots} \leq m < \underline{\ldots} \quad [2]
\]

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

\[
w = \underline{\ldots} \quad [2]
\]

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

(a) \( \subseteq \)

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

(b) \( \subseteq \)

......................................................................................................................... [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 $A = 4\pi r^2$.]

\[
\text{\large \begin{array}{c}
\text{......................................... cm}^2 [2] \\
\end{array}
\]

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

Find $PQ$.

\[
PQ = \text{......................................... cm [2]}
\]
23 \( \mathcal{C} = \{ \text{children who go to the park} \} \)
\( T = \{ \text{children who play tennis} \} \)
\( G = \{ \text{children who play golf} \} \)

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

(a) Complete the Venn diagram.

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

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

(b) Simplify \( (w^5)^4 \).
25 Without using your calculator, work out $1 \frac{7}{12} + \frac{13}{30}$.
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 $\sqrt{\frac{90006}{10.01^2}}$.
You must show all your working.

................................. [2]
27 (a) The $n\text{th}$ 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 $n\text{th}$ term of this sequence.

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

28

$OAB$ 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 $\pi$.

......................................... cm$^2$ [2]