INSTRUCTIONS

● Answer all questions.
● Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
● Write your name, centre number and candidate number in the boxes at the top of the page.
● Write your answer to each question in the space provided.
● Do not use an erasable pen or correction fluid.
● Do not write on any bar codes.
● You should use a calculator where appropriate.
● You may use tracing paper.
● You must show all necessary working clearly.
● Give non-exact numerical answers correct to 3 significant figures, or 1 decimal place for angles in degrees, unless a different level of accuracy is specified in the question.
● For π, use either your calculator value or 3.142.

INFORMATION

● The total mark for this paper is 56.
● The number of marks for each question or part question is shown in brackets [ ].
1 Write

(a) \( \frac{1}{2} \) as a percentage, ........................................... % [1]

(b) 0.7 as a fraction, ........................................................ [1]

(c) \( \frac{11}{20} \) as a decimal. ................................................. [1]

2 Points \( A \) and \( B \) are plotted on the grid.

(a) Write down the coordinates of point \( B \).

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

(b) Write \( \overrightarrow{AB} \) as a vector.

\[
\begin{pmatrix} \cdots \cdots \cdots \cdots \\
\end{pmatrix}
\] [1]

(c) On the grid, plot point \( C \) at \((-2, 3)\). [1]
3 Find the number of minutes in $4\frac{1}{2}$ hours.

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

4 Write down the mathematical name of this solid.

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

5 Cheng spins a fair 6-sided spinner numbered 1 to 6.

On the probability scale, draw an arrow (↑) to show the probability that the spinner lands on 4.

[1]

6 For this list of numbers find

(a) the mode,

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

(b) the median.

............................................. [2]
7 \( r = 2t + 3u \)

Work out the value of \( t \) when \( r = 18 \) and \( u = 4 \).

\[ t = \ldots \] [2]

8 The temperature at midnight was \(-8^\circ C\).
The temperature at noon is \( 6^\circ C \).

(a) Work out the difference between these two temperatures.

\[ \ldots \] \(^\circ C \] [1]

(b) The temperature at 7 am is \( 5^\circ C \) higher than the temperature at midnight.

Work out the temperature at 7 am.

\[ \ldots \] \(^\circ C \] [1]

9 The probability that it rains tomorrow is 0.47.

Find the probability that it does not rain tomorrow.

\[ \ldots \] [1]
10  Write 26 g as a percentage of 208 g.

\[ \text{.................................} \% \] [1]

11  

From this list, write down the number that is both a prime number and a factor of 195.

\[ \text{.................................} \] [1]

12  (a) \[ = \neq \gt \lt \]  

Put a ring around each of the symbols that make this statement correct.

\[ 0.5 \ldots \ldots \ldots \ldots \ldots \ldots 5\% \] [1]

(b) Insert one pair of brackets to make this statement correct.

\[ 7 - 3 - 1 + 2 = 7 \] [1]
The diagram shows two parallel lines intersecting a straight line.

Find the value of $x$.

\[ x = \text{..........................} \quad [2] \]

14 (a) These are the first four terms of a sequence.

\[
\begin{array}{cccc}
17 & 23 & 29 & 35 \\
\end{array}
\]

Find the next term.

\[ \text{..........................} \quad [1] \]

(b) These are the first four terms of a different sequence.

\[
\begin{array}{cccc}
3 & -1 & -5 & -9 \\
\end{array}
\]

(i) Find the next term in this sequence.

\[ \text{..........................} \quad [1] \]

(ii) Find the $n$th term.

\[ \text{..........................} \quad [2] \]
15 Sara takes 5 tests.
   Her mean score is 62.
   She takes another test and her mean score is now 68.

   Work out her score in the sixth test.

   ............................................... [3]

16 Nina changes 153 euros into dollars when the exchange rate is $1 = 0.9 euros.

   Calculate the amount Nina receives.

   $ ............................................... [1]
The area of this trapezium is 96 cm$^2$.

Find the value of $y$.

\[ y = \text{...} \] [3]

18 Marek buys a computer for $420.
He sells it at a loss of 15%.

Calculate the selling price of this computer.

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

19 Calculate the radius of a circle with circumference 26 cm.

\[ \text{...} \text{ cm} \] [2]
20 By writing each number in the calculation correct to 1 significant figure, find an estimate for the value of \[
\frac{4.3 \times 30.7}{6.6 - 1.8}.
\]

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

21 Find the interior angle of a regular 7-sided polygon.

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

22 **Without using a calculator**, work out \[ \frac{11}{12} + \frac{3}{4} \].

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

........................................... [3]
23 (a) Simplify.

\[ 32g^{32} \div 4g^4 \]

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

(b) Factorise completely.

\[ 10j - 15j^2 \]

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

(c) Expand the brackets and simplify.

\[ (x + 7)(x + 3) \]

............................................. [2]
24  (a)

Calculate the value of \( x \).

\[
x = \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots [2] 
\]

(b)

Show that the value of \( y \) is 5.9, correct to 2 significant figures.

\[
[3]
\]