As part of CIE’s continual commitment to maintaining best practice in assessment, CIE has begun to use different variants of some question papers for our most popular assessments with extremely large and widespread candidature. The question papers are closely related and the relationships between them have been thoroughly established using our assessment expertise. All versions of the paper give assessment of equal standard.

The content assessed by the examination papers and the type of questions are unchanged.

This change means that for this component there are now two variant Question Papers, Mark Schemes and Principal Examiner’s Reports where previously there was only one. For any individual country, it is intended that only one variant is used. This document contains both variants which will give all Centres access to even more past examination material than is usually the case.

The diagram shows the relationship between the Question Papers, Mark Schemes and Principal Examiner’s Reports.

**Question Paper**

- Introduction
- First variant Question Paper
- Second variant Question Paper

**Mark Scheme**

- Introduction
- First variant Mark Scheme
- Second variant Mark Scheme

**Principal Examiner’s Report**

- Introduction
- First variant Principal Examiner’s Report
- Second variant Principal Examiner’s Report

Who can I contact for further information on these changes?

Please direct any questions about this to CIE’s Customer Services team at: international@cie.org.uk
1 On a winter’s day in Vienna the maximum temperature was –2°C. The minimum temperature was 11°C lower than this. Write down the minimum temperature.

\[
\text{Answer} \quad \text{°C} \quad [1]
\]

2 Chris and Roberto share $35 in the ratio 5:2. Calculate how much Roberto receives.

\[
\text{Answer} \quad \$ \quad [2]
\]

3 Solve the equation \[1 - 2x = x + 4.\]

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

4 In 2005, a toy cost 52.50 reals in Brazil. In Argentina, 1 peso = 0.875 reals. Work out the cost of the toy in pesos.

\[
\text{Answer} \quad \text{pesos} \quad [2]
\]
5 Factorise completely \(4xy - 2x\).

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

6 The height of a tree is 25 metres.
The shadow of the tree has a length of 30 metres.
Calculate the size of the angle marked \(p^\circ\) in the diagram.

Answer \(p = \) .......................................................... [2]

7 The distance, \(d\) kilometres, between Windhoek and Cape Town is 1300 km, correct to the nearest 100 kilometres.
Complete the statement about the value of \(d\).

Answer .................................. \(\leq d < \) ................., [2]
8 (a) Draw all the lines of symmetry on the shape above. [1]

(b) A quadrilateral has rotational symmetry of order 2 and no lines of symmetry. Write down the geometrical name of this shape.

Answer(b) ................................................. [1]

9 (a) Write in the missing number. \[ \frac{5}{6} = \cdots \frac{\ldots}{18} \]

(b) Without using your calculator and writing down all your working, show that

\[ 1 \frac{2}{9} - \frac{5}{6} = \frac{7}{18}. \]

Answer(b)
10 Each interior angle of a regular polygon is 150°.
(a) Work out the size of each exterior angle.

Answer (a) .................................................. [1]

(b) Work out the number of sides of this polygon.

Answer (b) .................................................. [2]

11 A ship travels 50 kilometres from $A$ to $B$ on a bearing of 140°, as shown in the diagram.
Calculate how far south $B$ is from $A$.

Answer .................................................. km [3]
12

A straight line, \( l \), crosses the \( x \)-axis at \((1, 0)\) and the \( y \)-axis at \((0, 3)\).

(a) Find the gradient of the line \( l \).

\[ \text{Answer}(a) \quad \text{...........................................} \quad [1] \]

(b) Write down the equation of the line \( l \), in the form \( y = mx + c \).

\[ \text{Answer}(b) \quad y = \text{...........................................} \quad [2] \]

13

A school has 240 students.

(a) There are 131 girls.

What percentage of the students are girls?

\[ \text{Answer}(a) \quad \text{...........................................} \quad [2] \]

(b) One day 6.25\% of the 240 students are absent.

Work out the number of students who are absent.

\[ \text{Answer}(b) \quad \text{...........................................} \quad [2] \]
14 (a) Calculate the circumference of a circle of diameter 8 cm.

Answer (a) \( \pi \times 8 \) cm [2]

(b) \( AQB \) is a semi-circle.
Angle \( QAB = 29^\circ \).
Work out the size of angle \( ABQ \).

Answer (b) Angle \( ABQ = \) ............... [2]

15 Simplify
(a) \( a^0 \).

Answer (a) \( 1 \) [1]

(b) \( \left(x^3\right)^2 \).

Answer (b) \( x^6 \) [1]

(c) \( \left(\frac{3}{x}\right)^2 \).

Answer (c) \( \frac{9}{x^2} \) [2]
16 (a) (i) Write 17 598 correct to 2 significant figures.

Answer (a)(i) .......................................................... [1]

(ii) Write your answer to part (a)(i) in standard form.

Answer (a)(ii) .......................................................... [1]

(b) Write \(5.649 \times 10^{-2}\) as a decimal, correct to 3 decimal places.

Answer (b) ............................................................. [2]

17 (a) Alex invests $200 for 2 years at 4.05% per year simple interest. Calculate how much interest Alex receives.

Answer (a) $ .......................................................... [2]

(b) Bobbie invests $200 for 2 years at 4% per year compound interest. Calculate how much interest Bobbie receives. Give your answer to 2 decimal places.

Answer (b) $ .......................................................... [2]
(a) \( \overrightarrow{KL} = \begin{pmatrix} -3 \\ 3 \end{pmatrix} \). The point \( K \) is marked on the diagram.

(i) Draw \( \overrightarrow{KL} \) on the diagram. 

(ii) Write down the co-ordinates of the point \( L \).

Answer (a)(ii) \( \left( \ldots, \ldots \right) \) [1]

(b) \( P \) is the point \((-3, -3)\).

\[ \overrightarrow{PR} = \begin{pmatrix} 2 \\ 1 \end{pmatrix} \text{ and } \overrightarrow{PS} = 2 \overrightarrow{PR} \]

Find the co-ordinates of \( S \).

Answer (b) \( \left( \ldots, \ldots \right) \) [2]
The travel graph shows Maria’s walk to school one Monday morning.

(a) Calculate her speed during the first 20 minutes

(i) in metres/minute,

Answer(a)(i) ................................ m/min [1]

(ii) in kilometres/hour.

Answer(a)(ii) ................................. km/h [2]

(b) Calculate the average speed of her walk from home to school in kilometres/hour.

Answer(b) ................................. km/h [2]
1 On a winter’s day in Lesotho the maximum temperature was –3 °C. The minimum temperature was 9 °C lower than this. Write down the minimum temperature.

Answer ................................ °C [1]

2 Paulo and Maria share $45 in the ratio 4:5. Calculate how much Maria receives.

Answer $ .............................................. [2]

3 Solve the equation 2 – 3x = x + 10.

Answer x = ............................................. [2]

4 In 2006, a toy cost 70.80 reals in Brazil. In Argentina, 1 peso = 0.885 reals. Work out the cost of the toy in pesos.

Answer .............................................. pesos [2]
5 Factorise completely $2pq - 4q$.

Answer

6

The height of a tree is 22 metres.
The shadow of the tree has a length of 32 metres.
Calculate the value of the angle marked $p^\circ$ in the diagram.

Answer $p =$

7 The distance, $d$ kilometres, between Auckland and Tokyo is 8800 km, correct to the nearest 100 kilometres.
Complete the statement about the value of $d$.

Answer $\leq d < $
8  (a) Draw all the lines of symmetry on the shape above. [1]

(b) A quadrilateral has rotational symmetry of order 2 and no lines of symmetry. Write down the geometrical name of this shape.

Answer(b) ........................................ [1]

9  (a) Write in the missing number. \( \frac{5}{8} = \frac{\text{---}}{24} \) [1]

(b) Without using your calculator and writing down all your working, show that

\[ 1\frac{5}{12} - \frac{5}{8} = \frac{19}{24}. \]

Answer(b)
10 Each interior angle of a regular polygon is 160°.
(a) Work out the size of each exterior angle.

\[ \text{Answer(a)} \]  

(b) Work out the number of sides of this polygon.

\[ \text{Answer(b)} \]

11

A ship travels 40 kilometres from \( A \) to \( B \) on a bearing of 150°, as shown in the diagram. Calculate how far south \( B \) is from \( A \).

\[ \text{Answer} \] km [3]
A straight line, \( l \), crosses the \( x \)-axis at \((2, 0)\) and the \( y \)-axis at \((0, 4)\).

(a) Work out the gradient of the line \( l \).

Answer (a) \[ \text{..................................} \] [1]

(b) Write down the equation of the line \( l \), in the form \( y = mx + c \).

Answer (b) \( y = \text{..................................} \) [2]

A school has 320 students.

(a) There are 153 girls.

What percentage of the students are girls?

Answer (a) \[ \text{..................................} \] [2]

(b) One day 3.75\% of the 320 students are absent.

Work out the number of students absent.

Answer (b) \[ \text{..................................} \] [2]
14 (a) Calculate the circumference of a circle of diameter 13 cm.

Answer (a) \[ \text{cm} \] [2]

(b) [Diagram of AOB with 33° angle]

AOB is a semi-circle.
Angle \( QAB = 33° \).
Work out the value of angle \( ABQ \).

Answer (b) Angle \( ABQ = \) \[ \text{angles} \] [2]

15 Simplify

(a) \( t^5 \),

Answer (a) \[ \text{expression} \] [1]

(b) \( (y^2)^4 \)

Answer (b) \[ \text{expression} \] [1]

(c) \( \left( \frac{5}{p} \right)^2 \)

Answer (c) \[ \text{expression} \] [2]
16 (a) (i) Write 15 583 correct to 2 significant figures.

Answer(a)(i) .............................................. [1]

(ii) Write your answer to part (a)(i) in standard form.

Answer(a)(ii) .............................................. [1]

(b) Write $3.718 \times 10^{-3}$ as a decimal, correct to 4 decimal places.

Answer(b) .............................................. [2]

17 (a) Abdul invests $400 for 2 years at 6.05% per year simple interest. Calculate how much interest Abdul receives.

Answer(a) $ ............................................. [2]

(b) Samia invests $400 for 2 years at 6% per year compound interest. Calculate how much interest Samia receives. Give your answer to 2 decimal places.

Answer(b) $ ............................................. [2]
(a) \( \overrightarrow{KL} = \begin{pmatrix} -2 \\ 5 \end{pmatrix} \). The point \( K \) is marked on the diagram.

(i) Draw \( \overrightarrow{KL} \) on the diagram. [1]

(ii) Write down the co-ordinates of the point \( L \).

\[ Answer(a)(ii) \quad (............, ............) \] [1]

(b) \( P \) is the point \((-4, -4)\).

\( \overrightarrow{PR} = \begin{pmatrix} 3 \\ 2 \end{pmatrix} \) and \( \overrightarrow{PS} = 2 \overrightarrow{PR} \).

Find the co-ordinates of \( S \).

\[ Answer(b) \quad (............, ............) \] [2]
The travel graph shows Cecilia’s walk to school one Monday morning.

(a) Calculate her speed during the first 20 minutes

(i) in metres/minute,

\[ \text{Answer (a)(i)} \quad \text{………………… m/min} \quad [1] \]

(ii) in kilometres/hour.

\[ \text{Answer (a)(ii)} \quad \text{………………… km/h} \quad [2] \]

(b) Calculate the average speed of her walk from home to school in kilometres/hour.

\[ \text{Answer (b)} \quad \text{………………… km/h} \quad [2] \]