



EXAMINATIONS COUNCIL OF ESWATINI
Eswatini General Certificate of Secondary Education

CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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MATHEMATICS

6880/03

Paper 3 Short-Answer Questions (Extended)

October/November 2021

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Electronic Calculator
 Geometric instruments
 Mathematical tables (optional)
 Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in all the work you hand in.

Write in dark blue or black pen in the spaces provided on the Question paper. You may use an HB pencil for any diagrams or graphs.

Do **not** use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

If working is needed for any question it must be shown below that question. The number of marks is given in brackets [] at the end of each question or part question.

Electronic calculators should be used.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures.

Give answers in degrees to one decimal place.

For π , use either your calculator value or 3.142.

The total of the marks for this paper is 80.

For Examiner's Use

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This document consists of **16** printed pages and **4** blank pages.

- 1 Express 0.35 as a fraction in its simplest form.

Show your working clearly.

Answer [2]

- 2 List the following numbers in order of size, starting with the smallest.

0.3784

0.7483

0.0874

0.3074

Answer [2]

- 3 Evaluate.

$$\frac{2}{5} + \frac{1}{3}$$

Show your working.

Answer [2]

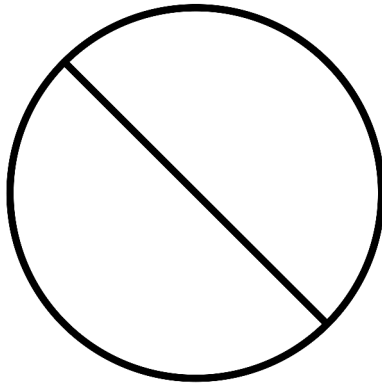
- 4 The price of an item including VAT (value added tax) at 14% is E513.

Find the price of the item before VAT.

Answer E [2]

3

5



For the diagram above, write down

(a) the number of lines of symmetry,

Answer (a) [1]

(b) the order of rotational symmetry.

Answer (b) [1]

6 Solve the equation.

$$6 - 5x = 3x + 10$$

Answer $x =$ [2]

- 7 Use one of these words that best describe the following probabilities.

Impossible, Unlikely, Evens, Probable, Certain

- (a) The probability for an event to occur is 1.

Answer (a) [1]

- (b) The probability for an event to occur is 0.

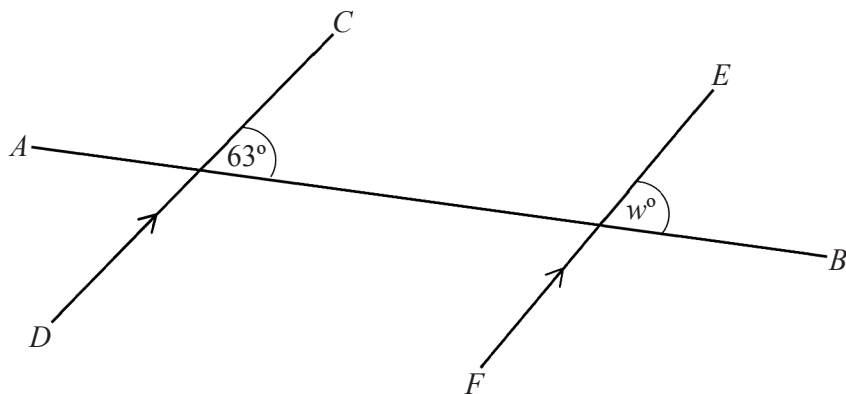
Answer (b) [1]

- (c) The probability for an event to occur is 0.002.

Answer (c) [1]

- 8 The diagram below shows straight lines AB , CD and EF .

Line CD is parallel to line EF .



Complete the following statement.

Angle $w = \dots\dots\dots^\circ$ because.....

..... [2]

- 9 You are given that $M = \begin{pmatrix} a & b \\ c & d \end{pmatrix}$.

The determinant of M is k .

Find M^{-1} .

Answer [3]

- 10 (a) Solve.

$$\frac{x+1}{2} \leq \frac{x-2}{5}$$

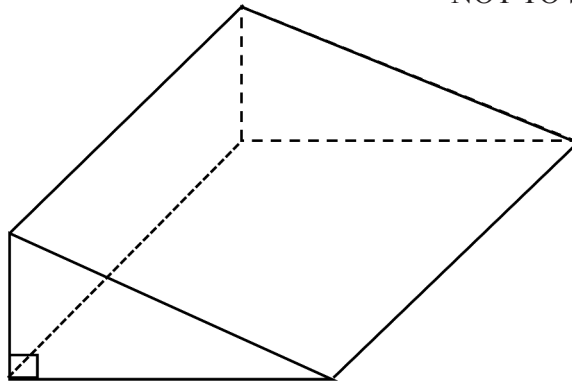
Answer (a) [3]

- (b) Represent the inequality $t > -5$ on a number line. [1]
-

- 11** The diagram shows a triangular prism.

Sketch the net of the prism.

NOT TO SCALE



[3]

- 12** The mass of a baby at birth was 3.8 kg.
After 3 months, the mass of the baby had increased to 5.1 kg.

Calculate the percentage increase in the mass.

Answer % [2]

- 13** y varies directly as $(x + 1)$ and varies inversely as z .
 $y = -3$ when $x = 2$ and $z = 5$.

(a) Write y in terms of x and z .

Answer (a) $y =$ [3]

(b) Find y when $x = 11$ and $z = -15$.

Answer (b) [1]

14 You are given the sequence

9, 5, 1, -3, ...

(a) Write down the next two terms.

Answer (a) [1]

(b) Find an expression for the n th term.

Answer (b) [2]

15 Given that $V = \frac{1}{2}\pi r^2 h$

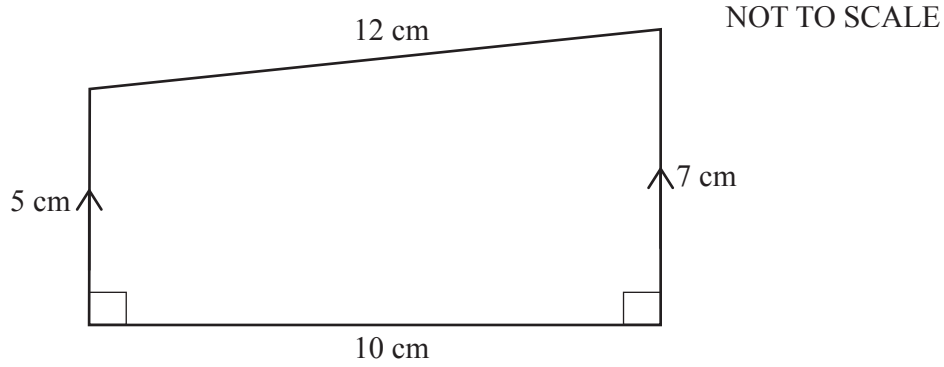
(a) Find V when $r = 3.4$ and $h = 8.7$.

Answer (a) [2]

(b) Express r in terms of V and h .

Answer (b) $r =$ [3]

16



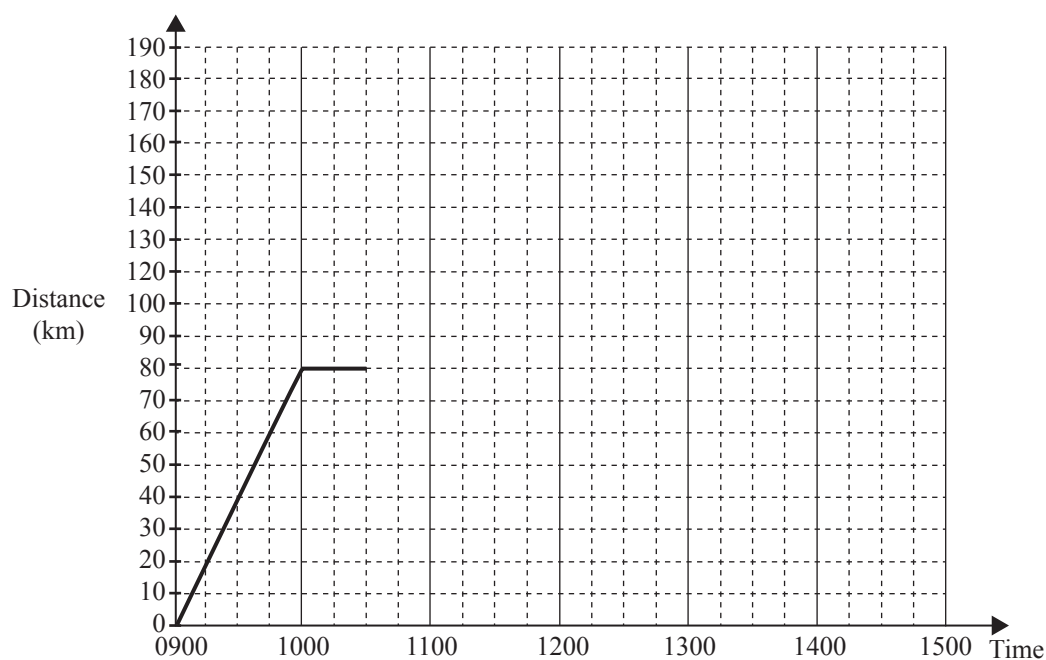
Work out the area of the shape.

Answer cm² [2]

- 17 Mr Ngobese leaves home at 09 00 and drives to a village.
He drives at a constant speed of 80 km/h.
His car gets a puncture after 1 hour.
He takes 30 minutes changing the wheel.

He then drives at a constant speed of 70 km/h.
He reaches the village after a further 1 hour 30 minutes.

Mr Ngobese spends 15 minutes in the village.
He then drives straight home at a speed of 92.5 km/h.



- (a) Complete the distance – time graph to illustrate Mr Ngobese's journey. [5]

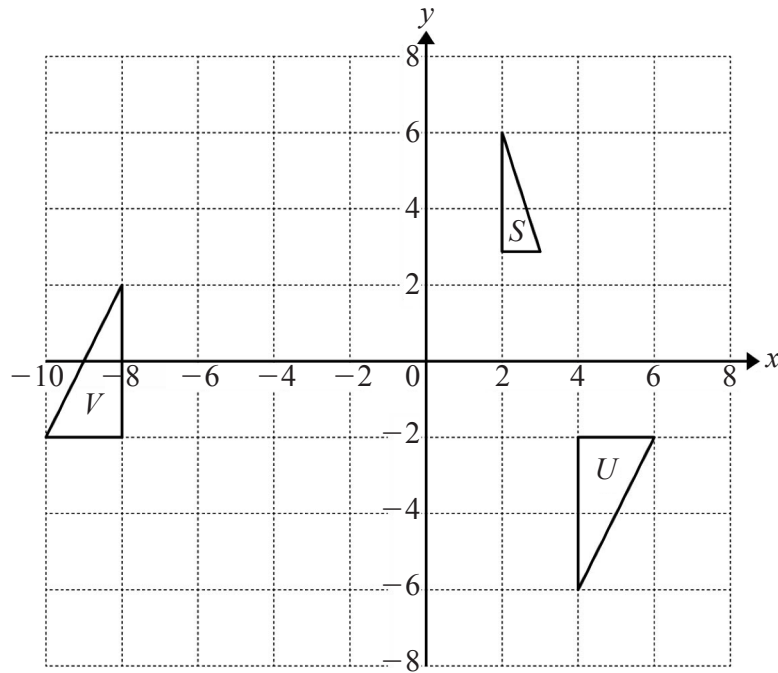
- (b) State the distance of the village from Mr Ngobese's home.

Answer (b) [1]

- (c) State the time at which Mr Ngobese arrives home.

Answer (c) [1]

- 18 In the diagram $R(U) = V$.



- (a) Describe fully R .

Answer (a)

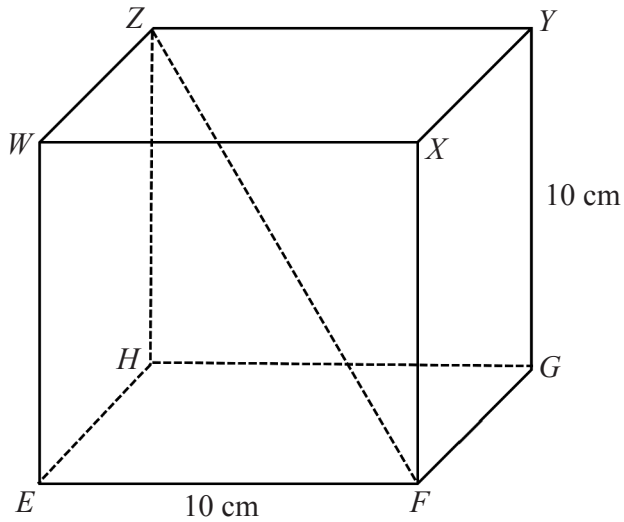
..... [3]

- (b) Triangle S can be mapped onto triangle V by a transformation P followed by a transformation Q .

Write down the name of transformation P and the name of transformation Q .

Answer (b) P and Q [2]

- 19 The diagram shows a cube with side length 10 cm.



NOT TO SCALE

- (a) Calculate the length of the diagonal FZ .

Answer (a) $FZ = \dots\dots\dots$ cm [3]

- (b) Calculate the angle between the diagonal FZ and the base $EFGH$.

Answer (b) $\dots\dots\dots^\circ$ [3]

- 20** In a school there were 270 students.
The height, h cm, of each student was measured.
The results are shown in the table.

h , cm	Number of students
$120 < h \leq 130$	15
$130 < h \leq 140$	24
$140 < h \leq 150$	36
$150 < h \leq 160$	45
$160 < h \leq 170$	50
$170 < h \leq 180$	43
$180 < h \leq 190$	37
$190 < h \leq 200$	20

Calculate an estimate of the mean height of the students.

Answer cm [4]

21 Simplify.

$$\frac{x^2 + 3x}{x^2 + 5x + 6}$$

Answer [3]

- 22** A survey was carried out nationwide to find the number of children who stayed with both parents, one parent or no parent.

The table shows the probability that a child stays with both parents, one parent, or no parent.

Number of parents	Two	One	None
Probability	0.57	0.38	x

- (a)** Find the value of x .

Answer (a) $x =$ [1]

- (b)** Two children are chosen at random.

Work out the probability that

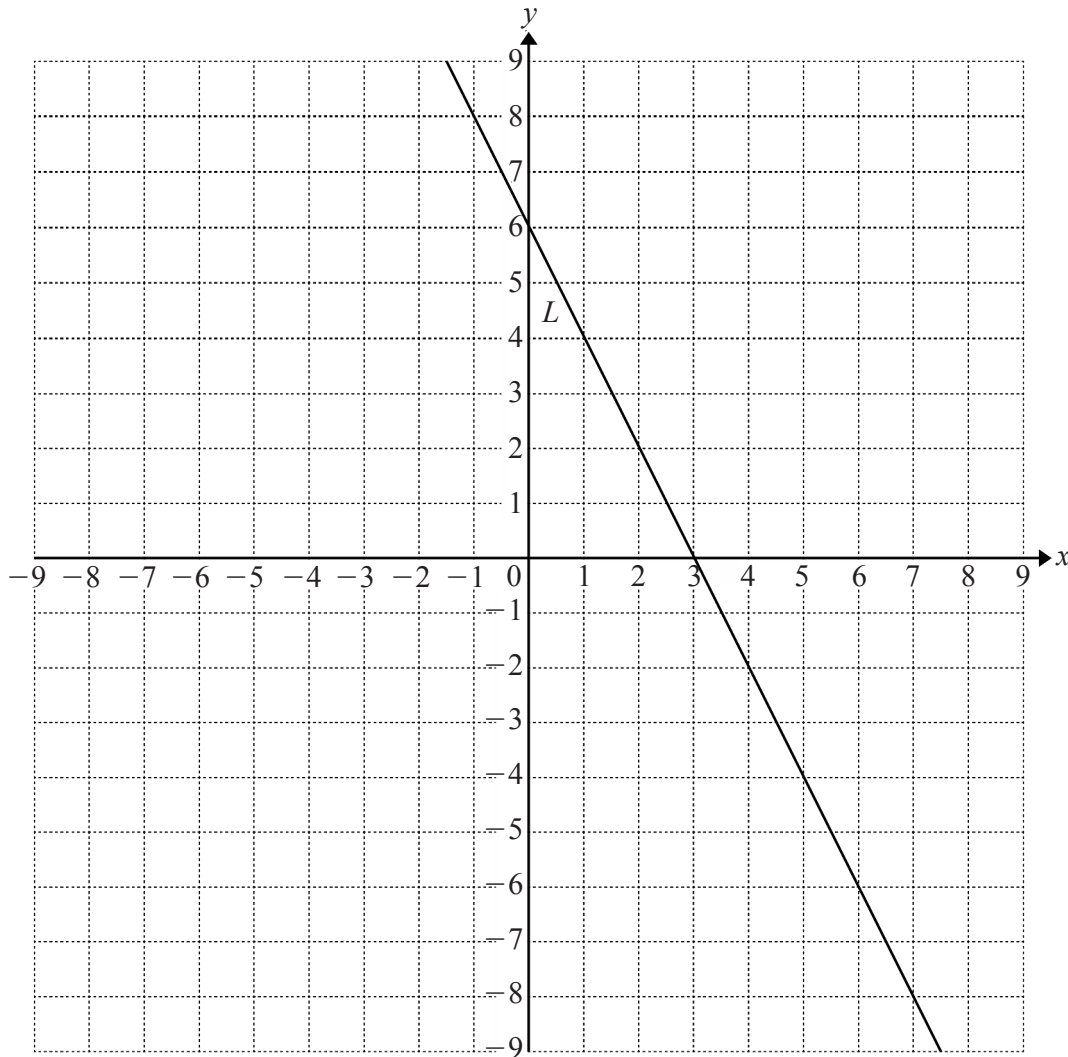
- (i)** both children stay with two parents,

Answer (b) (i) [2]

- (ii)** one child stays with one parent and the other child stays with no parent.

Answer (b) (ii) [3]

- 23 The diagram shows the graph of line L .



- (a) Find the gradient of line L .

Answer (a) [1]

- (b) Write down the equation of line L .

Answer (b) [1]

- (c) Draw the graph of the line $y = 3x - 14$. [2]

- (d) Write down the coordinate of the point of intersection of the two lines.

Answer (d) (..... ,) [1]

