



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

6880/02

Paper 2 Structured Questions (Core)

October/November 2022

2 hours

Candidates answer on the Question Paper.

Additional Materials: Geometrical Instruments
Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces provided.
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 90.

For Examiner's Use	
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Total	

This document consists of 14 printed pages and 2 blank pages.

1 The equation of a straight line is $y = 4x - 3$.

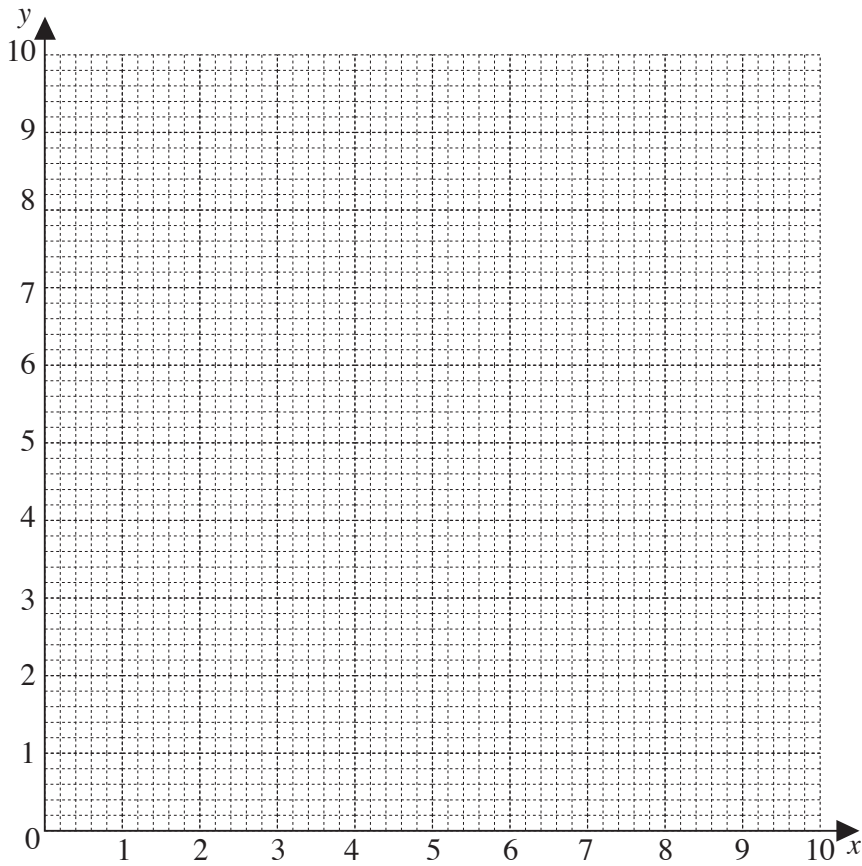
(a) State

(i) the gradient of the line,

Answer (a)(i) [1]

(ii) the y – intercept of the line.

Answer (a)(ii) [1]



(b) On the grid draw

(i) the horizontal line passing through point (2 , 5).

[1]

(ii) the line $x + y = 8$.

Answer (b)(ii) [2]

- 2 One of the solutions for the equation $x^2 + kx + 11 = 0$ is $x = 4$

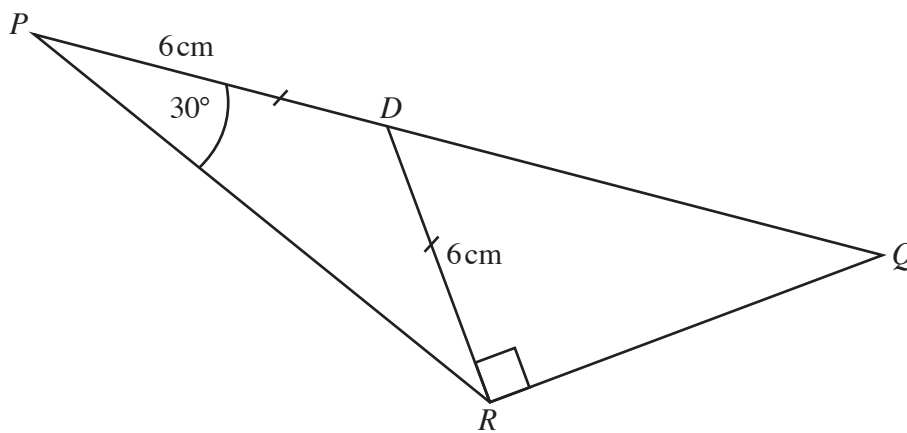
Find the value of k .

Answer [3]

- 3 The diagram shows triangle PQR .

D is a point on line PQ such that angle $DRQ = 90^\circ$.

$PD = DR = 6$ cm and angle $RPQ = 30^\circ$.



Calculate

- (a) angle PDR ,

Answer (a) $^\circ$ [2]

- (b) The length of DQ .

Answer (b) cm [3]

4 $f(x) = 2 - 3x$.

Find

(a) $f(-4)$,

Answer (a) [2]

(b) x when $f(x) = 8$,

Answer (b) $x =$ [3]

(c) an expression for $f^{-1}(x)$.

Answer (c) $f^{-1}(x) =$ [3]

5 Factorise completely.

(a) $16x + 20$

Answer (a) [1]

(b) $3p^2 - 48$

Answer (b) [2]

(c) $12x^3 + 8x^2$

Answer (c) [2]

6 Solve

(a) $15 - 2x < 19$,

Answer (a) [2]

(b) $\frac{t-2}{4} + \frac{t+5}{3} = 7$,

Answer (b) $t =$ [3]

(c) $(x+5)(x-4) = 0$.

Answer (c) $x =$ or $x =$ [2]

- 7 A ship leaves port F on a bearing of 065° and sails for 160 km to port G . It then leaves port G on a bearing of 130° and sails 110 km to port H .

- (a) Make a scale drawing of the journey.
Use a scale of 1 cm to represent 20 km.



- (b) Use the scale drawing to find [4]
- (i) the actual distance between port F and port H in kilometres,

Answer (b)(i) km [2]

- (ii) the bearing of port F from port H .

Answer (b)(ii) $^\circ$ [2]

- 8 (a) List all the factors of 48.

Answer (a) [2]

- (b) Find the highest common factor of 28 and 48.

Answer (b) [2]

9 $\underline{a} = \begin{pmatrix} 6 \\ 1 \end{pmatrix}$ and $\underline{b} = \begin{pmatrix} -4 \\ 3 \end{pmatrix}$.

Work out

(a) $2\underline{a} - 3\underline{b}$,

Answer (a) [2]

(b) $|\underline{a}|$.

Answer (b) [3]

- 10 (a) State the order of the matrix $\begin{pmatrix} 3 & 4 & -5 \\ -1 & 0 & 2 \end{pmatrix}$

Answer (a) [1]

- (b) Write down the single matrix that represents $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix} \begin{pmatrix} 3 & 7 & 1 \\ 0 & 4 & -5 \end{pmatrix}$.

Answer (b) [2]

- (c) Work out.

(i) $\begin{pmatrix} -3 & 0 \\ 2 & 1 \end{pmatrix} + \begin{pmatrix} -1 & 3 \\ -2 & 0 \end{pmatrix}$

Answer (c)(i) [1]

(ii) $\begin{pmatrix} 7 & 1 \\ 4 & -5 \end{pmatrix} \begin{pmatrix} 1 & -4 \\ 0 & 3 \end{pmatrix}$

Answer (c)(ii) [2]

11 (a) (i) Find 23.4% of 725.

Answer (a)(i) [2]

(ii) Express $\frac{5}{9}$ as a percentage.

Answer (a)(ii) % [2]

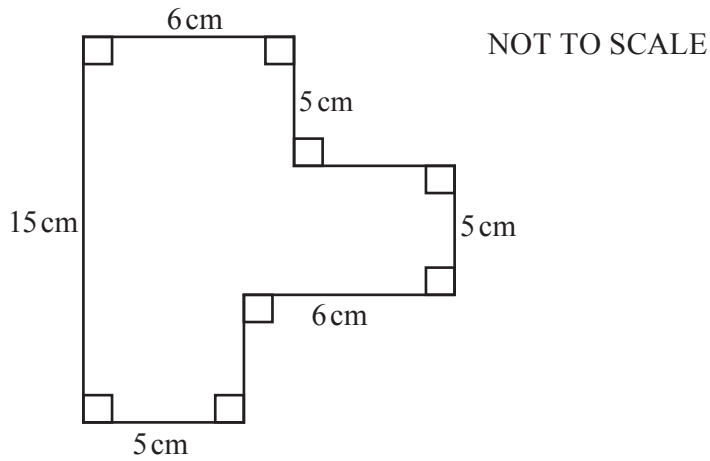
(b) (i) Work out 0.06×5.86 , giving your answer correct to the nearest tenth.

Answer (b)(i) [2]

(ii) Write 2736 correct to the nearest 25.

Answer (b)(ii) [1]

12



(a) Calculate the perimeter of the figure.

Answer (a) cm [2]

(b) Convert your answer for part (a) to mm.

Answer (b) mm [1]

(c) Calculate the area of the figure.

Answer (c) cm² [3]

13 The number of days each of 45 pupils was absent in a term are shown in the table.

Days absent	Number of pupils
0	12
1	9
2	11
3	8
4	5
Total	45

(a) Find the

(i) mode,

Answer (a)(i) [1]

(ii) median,

Answer (a)(ii) [2]

(iii) mean.

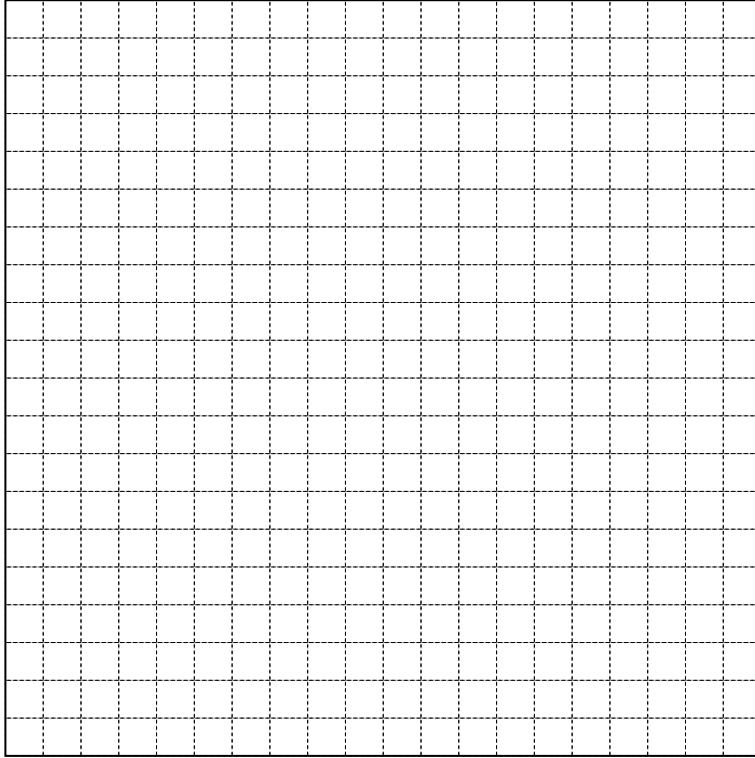
Answer (a)(iii) [3]

(b) A pie chart is to be drawn to show the information in the table.

Calculate the angle of the sector which represents students who were absent for 2 days.

Answer (b) ° [2]

(c) Draw a bar chart to represent the information in the table.



[3]

14 A train took 2 hrs 25 minutes to travel from Town A to Town B.
It arrived at 14 10 hours.

(a) Work out the time at which the train departed from Town A.

Answer (a) [2]

(b) The distance from Town A to Town B is 105 km.

Calculate the average speed of the train.

Answer (b) km/h [3]

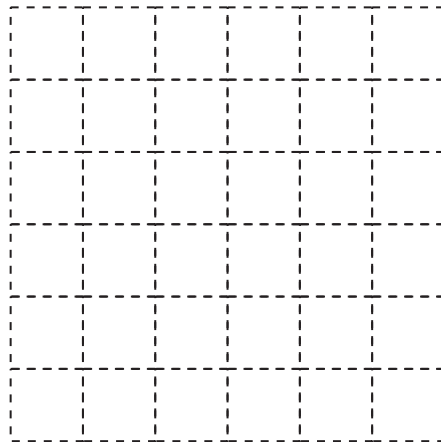
15 A basket contains 3 green apples and 2 red apples.
A boy picks an apple at random from the basket.

(a) Find the probability that the apple is green.

Answer (a) [1]

(b) He replaces the apple and picks an apple at random for a second time.

(i) Draw a possibility space diagram to show all possible outcomes of the two picks. [2]



(ii) Find the probability that the first apple is green and the second one is red.

Answer (b)(ii) [2]

