EXAMINATIONS COUNCIL OF LESOTHO
Lesotho General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	CANDIDATE NUMBER

MATHEMATICS
Paper 1 (Core)

0178/01
May/June 2026
1 hour
Marks: 60

Candidates answer on the Question Paper.

Additional Materials: Geometrical Instruments
Tracing paper (optional)

READ THESE INSTRUCTIONS FIRST

Write your name, centre number and candidate number in the relevant spaces provided at the top of this page.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams or graphs.

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

Answer **all** questions.

ELECTRONIC CALCULATORS **MUST NOT** BE USED IN THIS PAPER.

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.

This document consists of **12** printed pages.

Examinations Council of Lesotho

1 Evaluate.

(a) $\frac{2}{5} \div 2$

..... [2]

(b) $[0.5(10 + 6)] \div 4$

..... [2]

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2 By writing each number correct to 1 significant figure, estimate.

$2.511 \times \sqrt{8.71} + 7.822$

..... [2]

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3 **(a)** Write 300 200 015 in words.

.....

..... [1]

(b) Given that 300 200 015 can be written in the form $3 \times 10^8 + b + 15$, express the value of b in standard form.

..... [1]

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4 An integer, when written to one significant figure, is 7000.

Find the greatest possible value of the integer.

..... [1]

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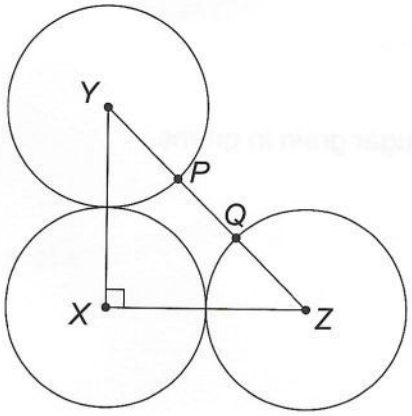
5 The diagram shows three identical circles of radius 1 unit.
X, *Y* and *Z* are centres.
The points *P* and *Q* lie on the circumferences of the two circles.
XY is perpendicular to *XZ*.



Find the value of b when the distance *PQ* is $\sqrt{8} - b$.

$b =$ ..... [3]

6 Factorise completely.

(a) $2t + t^3$

..... [1]

(b) $x + t - 1 - tx$

..... [2]

7 The number of sugar grains in a 2 kg packet is 0.5 billion.

Write, in standard form,

(a) the number of sugar grains in the packet,

..... [1]

(b) the mass of each sugar grain in grams.

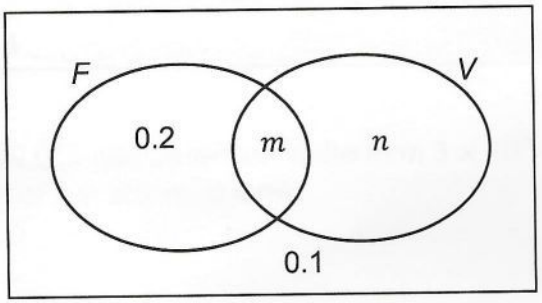
.....g [2]

8 In a class of 40 students, the probabilities that a student will take part in football and volleyball are recorded.
The probability that a student takes part in

- football (F) only is 0.2
- neither volleyball (V) nor football is 0.1

The number of students who will take part in volleyball only is 18.

Some probabilities are shown in the Venn diagram.



Determine

(a) the probability, n, that a student will take part in volleyball only,

..... [1]

(b) the number of students that will take part in both football and volleyball.

..... [2]

9 **(a)** $(3x - y)^2 - (x - 5)^2 = 0$.
If $2x - y + 5 = 0$ satisfies the above equation,

show that $4x - y - 5 = 0$ also satisfies the equation $(3x - y)^2 - (x - 5)^2 = 0$.

[2]

(b) Hence, determine the value of x.

$x =$..... [2]

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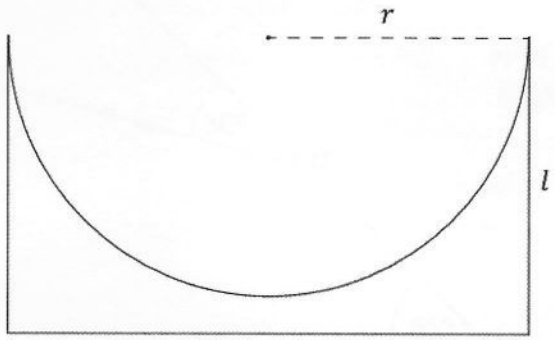
10 The diagram shows a rectangle of width l and semicircle of radius r.
The perimeter of the figure is 8 cm.



Show, in terms of r, that the width, $l = 4 - r - \frac{\pi r}{2}$.

.....[3]

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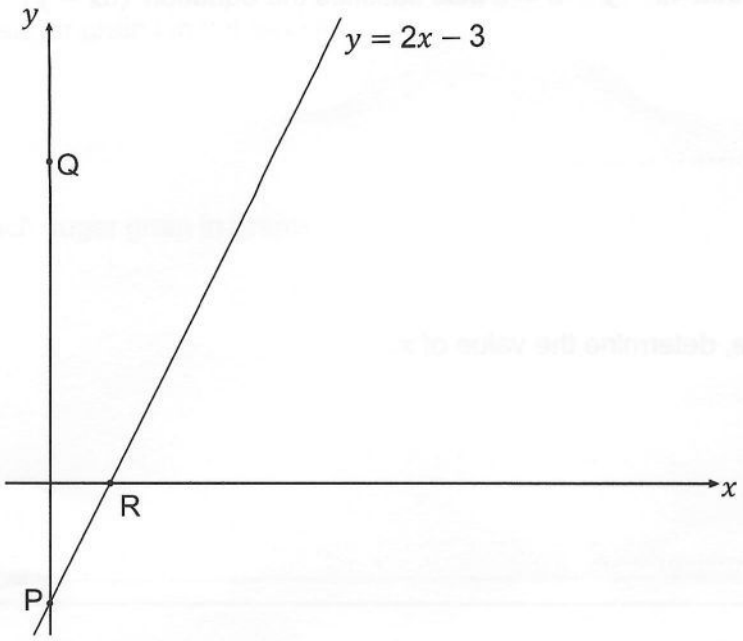
11 The graph shows line $y = 2x - 3$ which intersects the axes at P and R.
The point Q lies on the y –axis such that the length of line segment, PQ, is 11 units.



(a) Write the equation of the line which passes through Q and is parallel to the line $y = 2x - 3$.

..... [2]

(b) Find the coordinates of the midpoint of the line QR.

..... [2]

12 Solve the simultaneous equations.

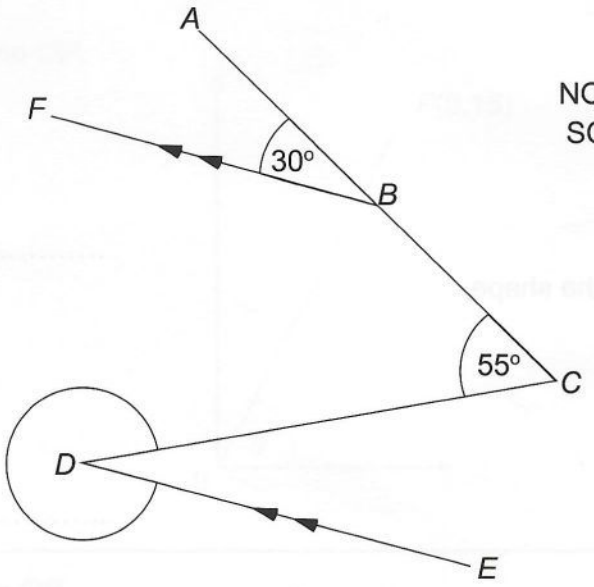
$2a + 3b = 3$

$a = \dfrac{3b - 15}{2}$

$a =$.....

$b =$ .....[3]

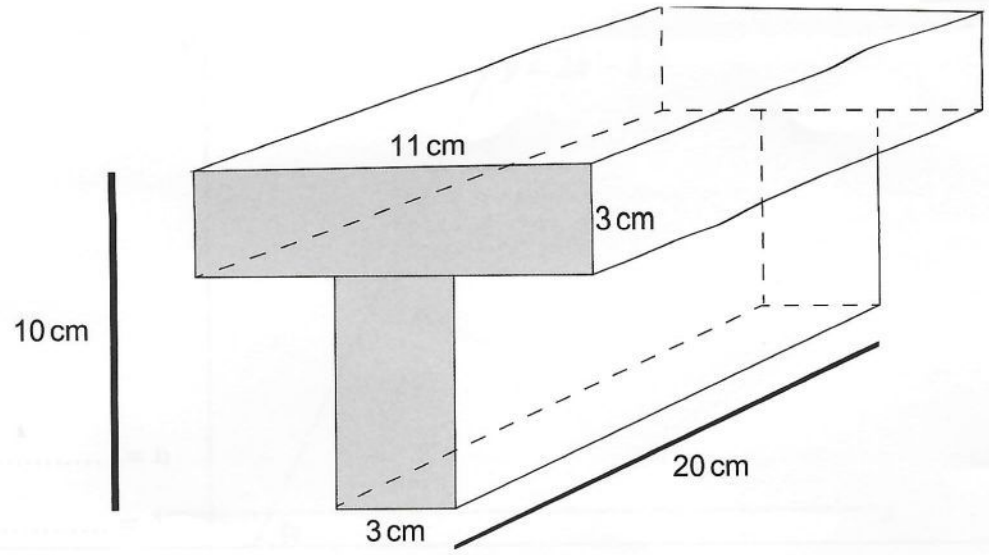
13 In the diagram, lines *FB* and *DE* are parallel.
Angle *ABF* = 30° and angle *ACD* = 55°.



Calculate the size of reflex angle *EDC*.

..... ° [2]

14 The diagram shows a block made up of cuboids.
The dimensions are as shown.



Calculate

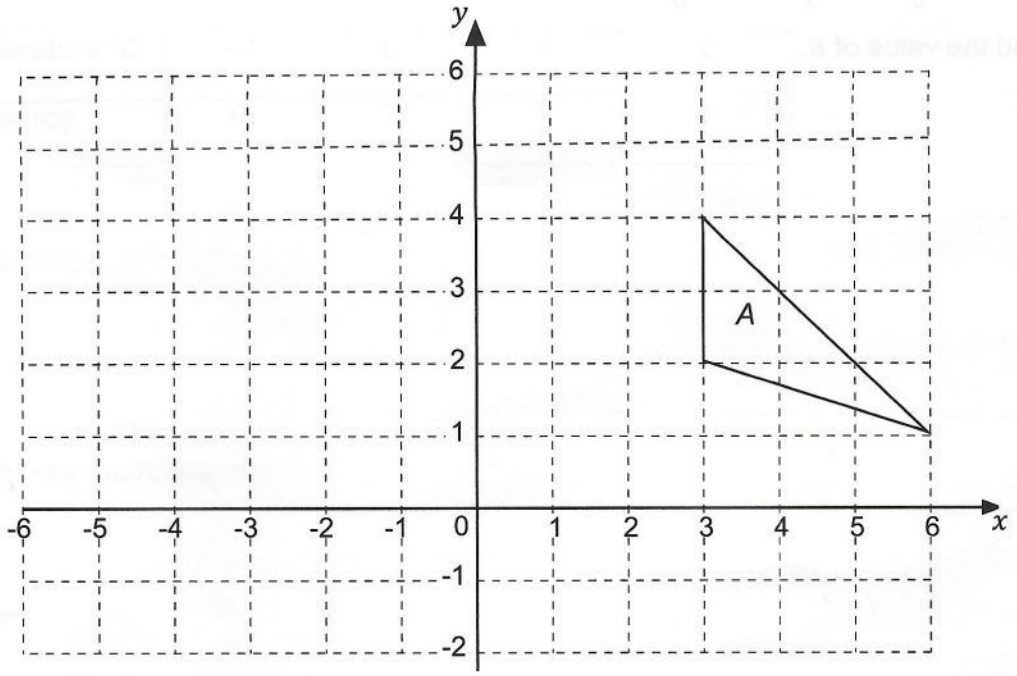
(a) the area of the shaded region,

.....cm^2[2]

(b) the volume of the shape.

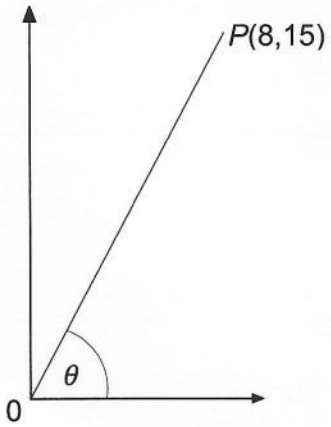
.....cm^3[1]

15 The grid shows triangle A.



Draw the image of A after rotation, centre (2,0) through anticlockwise 90°. [2]

16 The diagram shows line OP.



Find

(a) the length of line OP,

.....units [2]

(b) the value of tan θ.

.....[1]

17 Given $\frac{x+2}{3} + \frac{x+B}{2} = \frac{5x+13}{6}$,

find the value of B.

$B =$ ..... [3]

18 $\mathbf{A} = \begin{pmatrix} 2 & 3 \\ 1 & -5 \end{pmatrix}$ and $\mathbf{B} = \begin{pmatrix} 1 & -4 \\ 1 & 5 \end{pmatrix}$

Find the value of

(a) $2\mathbf{A}$,

.....[1]

(b) $\mathbf{A} + \mathbf{B}$.

.....[2]

19 The frequency table shows the temperature of items in a refrigerator.

temperature °C	−1	0	1	2
frequency	6	3	7	4

Find

(a) the range,

.....[1]

(b) the mean temperature.

.....° [2]

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20 Simplify the ratio.

$\frac{2}{5}$: 0.35 : 36%

.....[2]

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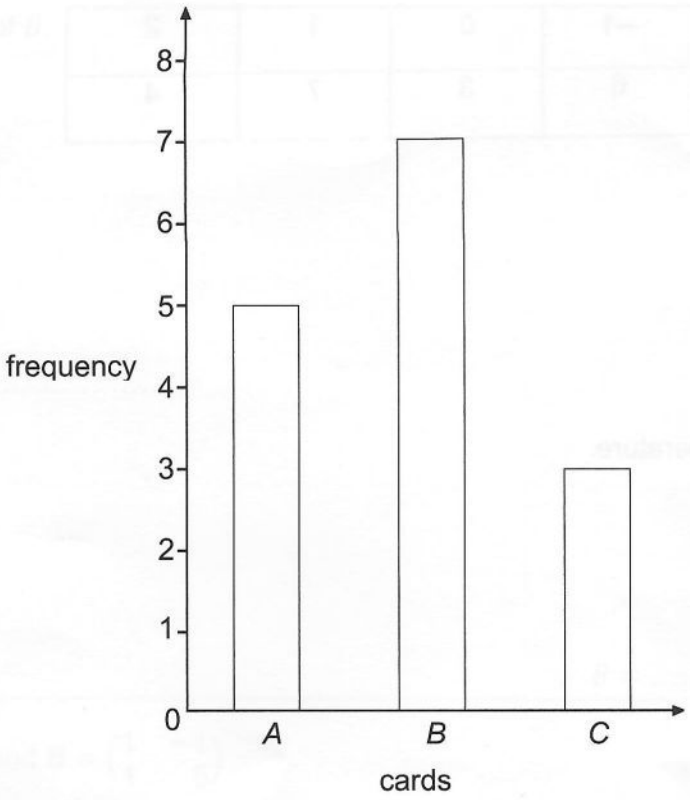
21 The bar chart shows the number of cards labelled *A*, *B* and *C*.



The data is to be drawn on a pie chart.

Calculate the sector angle for the card labelled *B*.

.....° [2]

22 An item bought for M650 was sold for M754.

Calculate the percentage profit.

.....% [2]