

THE ENGLISH SCHOOL NICOSIA
YEAR 2 MID-PROGRAMME ENTRY EXAMINATIONS 2025

MATHEMATICS



31 MAY 2025

Time allowed: 2 hours

Instructions to candidates

Answer all the questions in the spaces provided.

Without sufficient working, correct answers may be awarded no marks.

Information to candidates

This paper has 25 questions.

There are 20 pages in this question paper including the cover page.

Full marks may be obtained for answers to all questions.

The total marks for this paper are 120.

The marks for parts of a question are shown in round brackets, e.g. (2)

Total marks for each question are given at the end of that question, e.g. Total: 4 marks

Calculators are not allowed.

Advice for candidates

Write your answers neatly and in good English.

Work steadily through the paper.

Do not spend too long on one question.

Show all stages in any calculations.

Materials required for the paper

Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

1. Do the calculations.

(a) $25 - 36 \div (-4) + (-11) =$

(3)

(b) $3(3 - 5) \times 4 + [(-18) + (-2)] \div [2(-2)] =$

(4)

Total: 7 marks

2. Anna had €2500 in her bank account. She received €1700 as her year-end bonus. If she spent €800 on a trip and put the rest in her bank account, how much money is left in her bank account?

€ _____

Total: 2 marks

3. (a) Write the numbers 30, 48 and 72 as the product of prime factors.

$$30 = \underline{\hspace{2cm}}$$

$$48 = \underline{\hspace{2cm}}$$

$$72 = \underline{\hspace{2cm}} \quad (4)$$

- (b) Find the Highest Common Factor (HCF) of 30, 48 and 72.

$$\underline{\hspace{2cm}} \quad (2)$$

Total: 6 marks

4. Three fountains release a jet of water at regular intervals.
Fountain A sprays every 45 seconds.
Fountain B sprays every 60 seconds.
Fountain C sprays every 1 minute and 15 seconds.
If all three fountains first spray together at 10:20 am, at what time will they next spray together?

$\underline{\hspace{2cm}}$
Total: 5 marks

5. Round the following:

(a) 28763 to the nearest thousand

(b) 4849 to the nearest hundred

(c) 7.34829 to 2 decimal places

(d) 0.0045632 to 3 significant figures

Total: 4 marks

6. (a) Expand and simplify the following expression fully:

$$2(3x - 4y + 5) - 5(x - 2y) + 3(2x + y)$$

(3)

(b) Hence, find the value of the expression when $x = 2$ and $y = -1$.

(2)

Total: 5 marks

7. Solve the following equations.

(a) $5(2x - 3) = 3(x + 7) + 2(x - 4)$

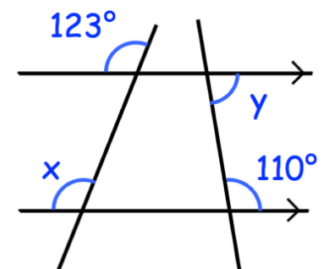
(4)

(b) $\frac{3(x - 2)}{4} + \frac{2(x + 5)}{3} = \frac{5x - 1}{6}$

(4)

Total: 8 marks

8. Find the size of angles x and y , giving a reason for your answers.



$x = \underline{\hspace{2cm}}^\circ$

Reason: _____

$y = \underline{\hspace{2cm}}^\circ$

Reason: _____

Total: 4 marks

9. Alex has x marbles.
Ben has 5 marbles less than Alex.
Chloe has twice as many marbles as Ben.
Together, they have 57 marbles.

- (a) Write an equation to represent this situation.
You don't need to simplify your equation.

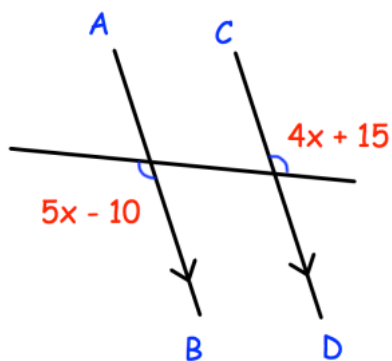
(2)

- (b) Solve the equation to find how many marbles Alex has.

(3)

Total: 5 marks

10. Find x .



Total: 3 marks

11. Convert the following.

(a) 2.5 m^2 _____ cm^2

(b) 7500 ml _____ litres

(c) 2.75 hours _____ minutes

(d) 5.4 kg _____ g

Total: 4 marks

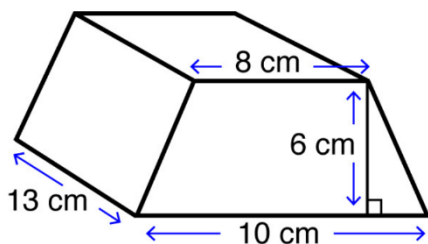
12. Factorise the following.

(a) $5x + 15y =$ _____
(1)

(b) $xy + bx - ay - ab =$ _____
(2)

Total: 3 marks

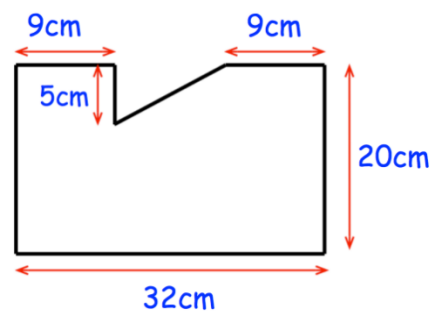
13. The diagram shows a prism. The cross-section of the prism is a trapezium.
Work out the volume of the prism.



_____ cm^3

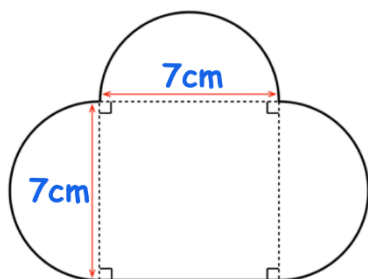
Total: 3 marks

14. (a) Work out the area of the following shape.



_____ cm²
(4)

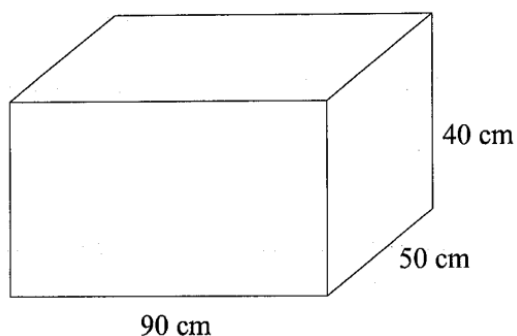
(b) Work out the perimeter of the following shape. Use $\pi = \frac{22}{7}$.



_____ cm
(4)

Total: 8 marks

15. The diagram shows an empty water container. Fiona is going to use a bucket to fill the container. Each bucket can hold 12 litres of water. How many buckets of water will be needed to fill the container?



Total: 4 marks

16. Three friends — Anna, Ben, and Chloe — shared a bag of marbles in the ratio 2:5:7.
If Chloe received 84 marbles,

(a) how many marbles did Anna receive?

(2)

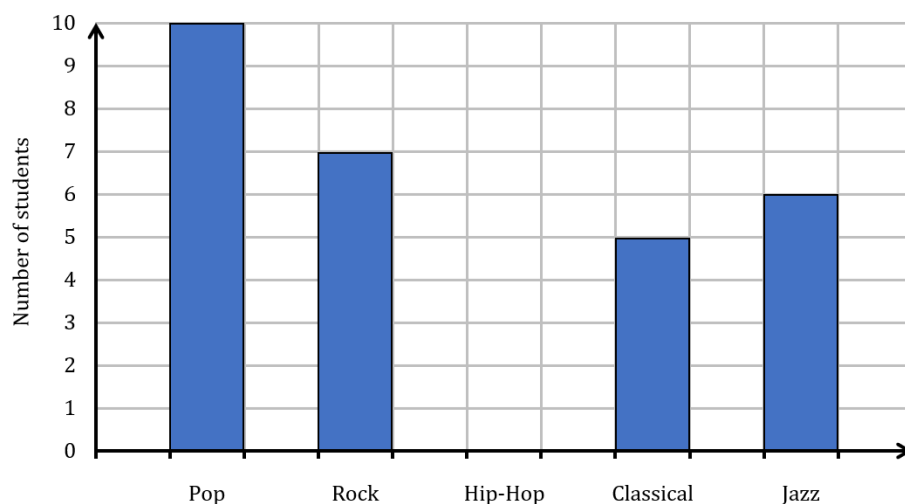
(b) Find the total number of marbles in the bag.

(2)

Total: 4 marks

17. A group of 36 students were asked about their favourite type of music. The incomplete table and bar chart below show their answers.

Type of music	Pop	Rock	Hip-Hop	Classical	Jazz
Number of students	10	7		5	



- (a) Complete the table. (2)
- (b) Complete the bar chart. (1)
- (c) A student is selected at random. What is the probability that their favourite type of music is not Pop?

_____ (1)

Total: 4 marks

18. A group of students were asked about their favourite sport.
The results are displayed in a pie chart.

- The angle representing Tennis is 30° .
- The angle representing Basketball is three times the angle for Tennis.
- The number of students who chose Swimming is the same as the number who chose Basketball.
- 25 students chose Football.

Complete the table below and find the total number of students in the class.

Sport	Angle
Football	
Tennis	30°
Swimming	
Basketball	

Total number of students = _____

Total: 5 marks

19. The price of a television was reduced by 15% during a sale. If the sale price was \$680,

(a) find the original price of the television.

\$ _____
(2)

(b) How much money was saved?

\$ _____
(2)

Total: 4 marks

20. (a) Below are the first 12 terms of the Fibonacci sequence. Complete the gaps.

1, 1, 2, 3, 5, 8, 13, ____, 34, 55, ____, 144

(2)

(b) The sequence below is an arithmetic sequence.

Find an expression for the n^{th} term of the sequence.

7, 11, 15, 19, 23, ...

n^{th} term = _____
(2)

(c) Below is a part of Pascal's triangle. Complete the missing row.

					1					
					1		1			
				1		2		1		
			1		3		3		1	
		1		5		10		10		5
	1		6		15		20		15	
1		7		21		35		35		21

(2)

Total: 6 marks

21. The weights (in kilograms) of 8 parcels delivered in a day are:

7 2 5 8 3 10 5 16

Find the mean, median and mode weight of the parcels.

Mean = _____ kg

Median = _____ kg

Mode = _____ kg

Total: 4 marks

22. The cost, € y , is directly proportional to the number of notebooks, x , bought.

(a) Complete the table below:

Number of notebooks, x	2	4	6	8	10
Cost, € y			15		

(2)

(b) Write the equation that links y and x .

_____ (2)

(c) Find the cost of buying 15 notebooks.

€ _____ (2)

Total: 6 marks

23. A fair six-sided die and a spinner with three colours (Red, Blue, Green) are used in an experiment.

(a) List the sample space.

(2)

(b) Find the probability of getting a 5 and Blue.

_____ (1)

Total: 3 marks

24. The scale of a map is 1 : 20000.

- (a) The actual distance between two towns is 1.8 km.
Find the distance between the towns on the map in cm.

_____ cm
(2)

- (b) A rectangular park on the map has an area of 12 cm².
Find the actual area of the park in km².

_____ km²
(3)

Total: 5 marks

25. The diagram below shows a line **L** drawn on a grid.

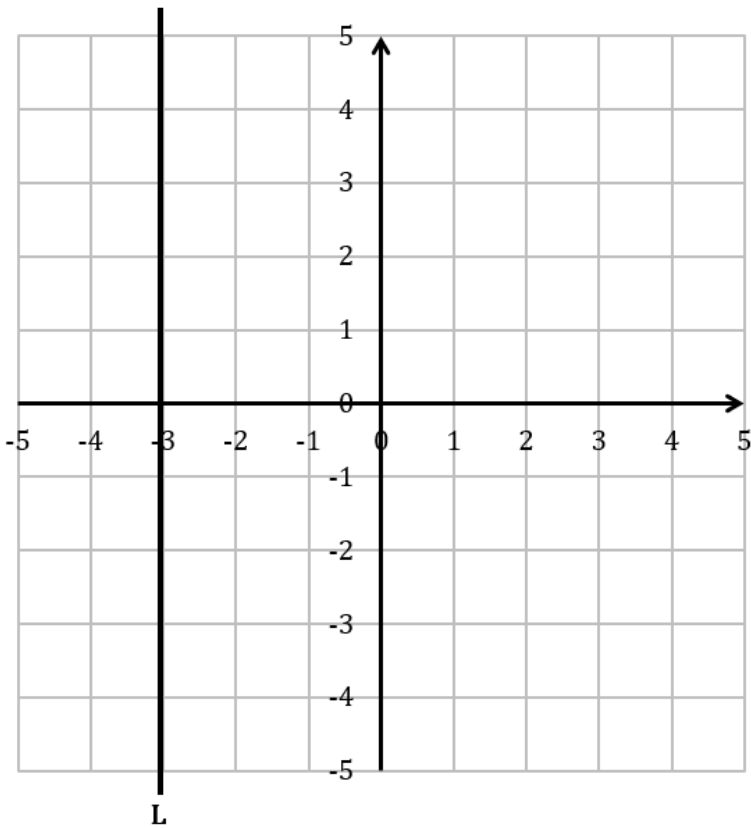
(a) Write down the equation of line **L**.

_____ (1)

(b) On the same grid, draw the graph of the line $y = -\frac{1}{2}x + 1$ for $-4 \leq x \leq 4$.
You can use the table below to help you.

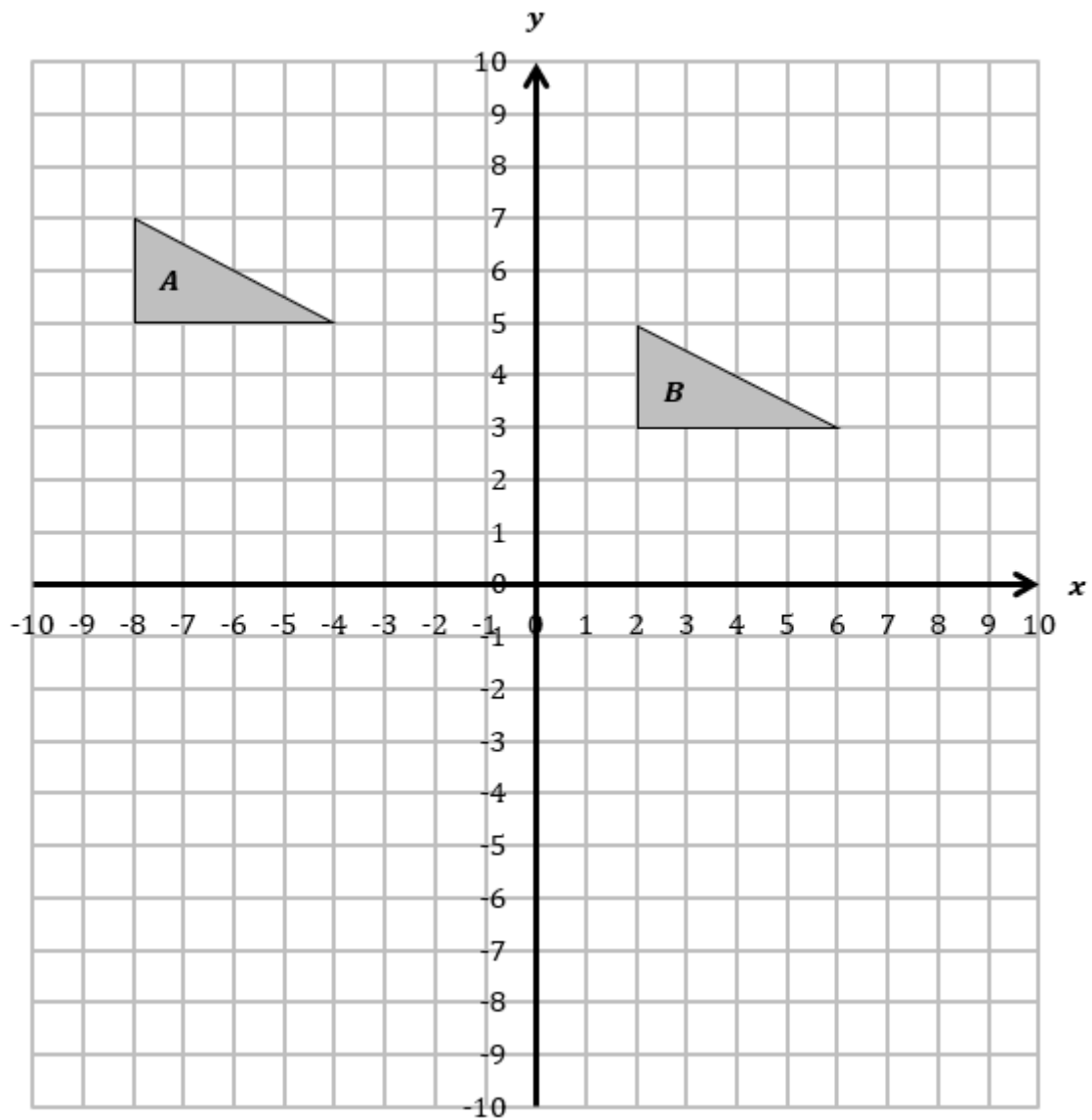
x	-4	0	4
y			

(3)



Total: 4 marks

26.



- (a) Describe fully the single transformation that maps shape **A** onto shape **B**.

(2)

- (b) On the grid, reflect shape **A** in the x -axis. Label the new shape **C**.

(2)

Total: 4 marks

END OF PAPER

EXTRA PAGE

