ELITE MATHEMATICS

Modular Unit 1

Linear to Modular | Regional papers

Student question book

23 question entries | 80 marks

Linear questions reorganised for Modular practice. Not an original Pearson Modular examination.

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Student edition | June 2026 | Elite Mathematics

Question 1

3 marks

June 2026 | 4MA1/1HR | Mixed-number multiplication

1 Show that $2\frac{4}{5} \times 3\frac{3}{7} = 9\frac{3}{5}$

(Total for Question 1 is 3 marks)

Question 3

2 marks

June 2026 | 4MA1/1HR | Elementary index laws

3 (a) Simplify $e^7 \times e^3$

.....

(1)

(b) Simplify $g^5 \div g^2$

.....

(1)

(Total for Question 3 is 2 marks)

Question 4

2 marks

June 2026 | 4MA1/1HR | Bounds of rounded measurements

4 The weight of a giraffe is 1178 kg, correct to the nearest kg

(i) Write down the lower bound of the weight of the giraffe.

..... kg

(1)

(ii) Write down the upper bound of the weight of the giraffe.

..... kg

(1)

(Total for Question 4 is 2 marks)

Question 5

4 marks

June 2026 | 4MA1/1HR | Probability totals and frequency

5 A bag contains only blue counters, green counters, red counters and yellow counters.

Danny takes a counter at random from the bag.

The table gives information about the probabilities that he takes a blue counter or a green counter or a red counter or a yellow counter.

Colour	blue	green	red	yellow
Probability	0.45	0.31	$5x$	x

There are 400 counters in the bag.

Work out the number of red counters in the bag.

.....

(Total for Question 5 is 4 marks)

Question 8

2 marks

June 2026 | 4MA1/1HR | Quadratic factorisation

8 Factorise $x^2 - 12x + 32$

.....

(Total for Question 8 is 2 marks)

Question 13

3 marks

June 2026 | 4MA1/1HR | Straight-line gradient and intercept

13 The straight line **L** has equation $4y - 10x - 5 = 0$

(a) Find the gradient of **L**

.....

(2)

(b) Find the coordinates of the point where **L** crosses the y-axis.

(..... , ...)

(1)

(Total for Question 13 is 3 marks)

Question 16

6 marks

June 2026 | 4MA1/1HR | Algebraic fractions and expansion

16 (a) Express $\frac{5}{8} - \frac{x+2}{4x}$ as a single fraction in its simplest form.

.....

(3)

(b) Expand and simplify $3x(2x - 1)(x + 4)$

.....

(3)

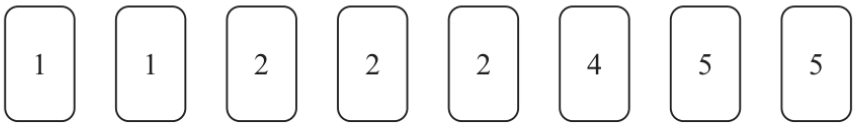
(Total for Question 16 is 6 marks)

Question 18

3 marks

June 2026 | 4MA1/1HR | Probability without replacement

18 Here are 8 cards.
There is a number on each card.



Gordon puts the 8 cards in a bag.
He takes at random a card from the bag and does not replace it.
Gordon then takes at random a second card from the bag.

Calculate the probability that the number on the second card is 3 more than the number on the first card.

.....

(Total for Question 18 is 3 marks)

Question 21

5 marks

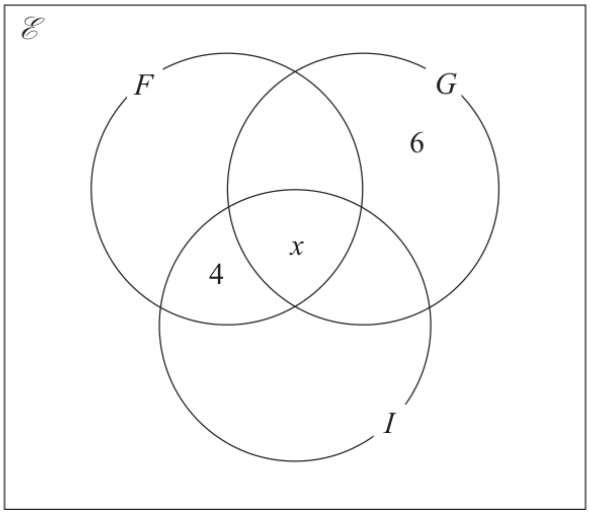
June 2026 | 4MA1/1HR | Three-set Venn diagram

21 60 students were asked if they study French (F), German (G) or Italian (I)

Of these students

32 students study French
24 students study German
27 students study Italian
16 students study French and German
15 students study German and Italian

The incomplete Venn diagram gives some more information about the languages the 60 students study.



(a) Work out the value of x

$x =$ .....

(3)

(b) Work out how many of the 60 students study none of French or German or Italian.

.....

(2)

(Total for Question 21 is 5 marks)

Question 22

4 marks

June 2026 | 4MA1/1HR | Triangle area using the sine rule

22 The diagram shows triangle ABC

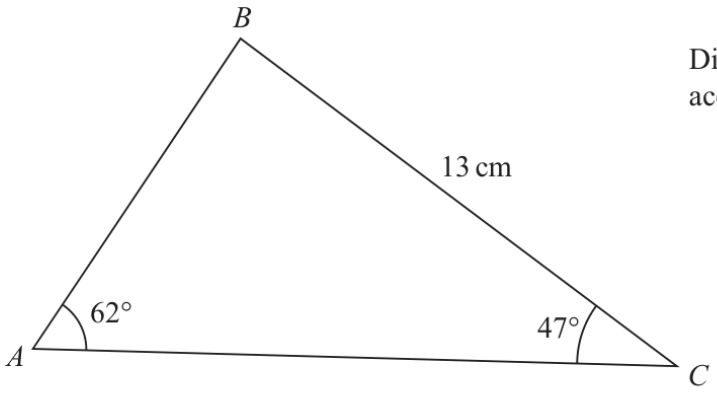


Diagram **NOT** accurately drawn

Calculate the area of the triangle.
Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 22 is 4 marks)

Question 26

3 marks

June 2026 | 4MA1/1HR | Exponential equation using common bases

26

$$\frac{27^x \times 3^{n+6}}{9^{4-n}} = \frac{6^x}{2^x}$$

Express x in terms of n
Show your working clearly and simplify your expression.

$x =$ .....

(Total for Question 26 is 3 marks)

Question 1

3 marks

June 2026 | 4MA1/2HR | Pythagoras

1 The diagram shows a right-angled triangle.

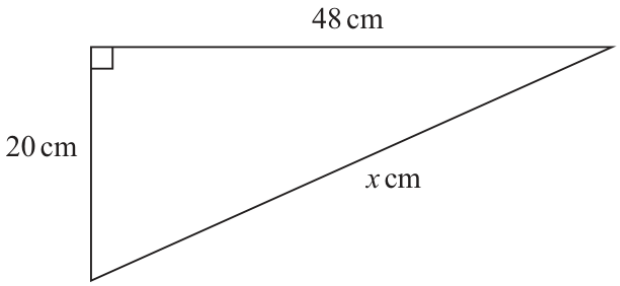


Diagram **NOT** accurately drawn

Work out the value of x

$x =$ .....

(Total for Question 1 is 3 marks)

Question 3

1 marks

June 2026 | 4MA1/2HR | Sets

3 $\mathscr{E}$ = {integers from 1 to 12}
A = {factors of 12}

List the members of the set A'

.....

(Total for Question 3 is 1 mark)

Question 4 | parts a, c, d

6 marks

June 2026 | 4MA1/2HR | Linear equations, substitution and algebraic indices

4 (a) Solve $3(x + 2) = 1 - 5x$
Show clear algebraic working.

$x =$ .....

(3)

(c) Simplify m^0

.....

(1)

(d) Simplify $(4r^2t)^3$

.....

(2)

Question 9

3 marks

June 2026 | 4MA1/2HR | Compound units: speed

9 Change a speed of 198 kilometres per hour to a speed in metres per second.
Show your working clearly.

..... m/s

(Total for Question 9 is 3 marks)

Question 10

3 marks

June 2026 | 4MA1/2HR | Density and cylinder volume

10 The diagram shows a solid cylinder.

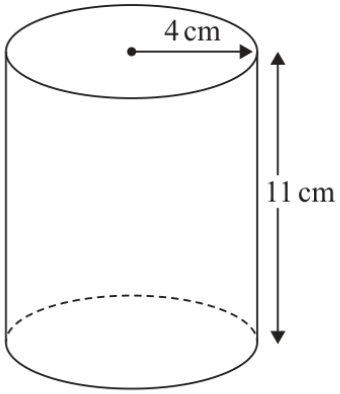


Diagram **NOT** accurately drawn

The cylinder has radius 4 cm and height 11 cm
The cylinder is made from wood with a density of 0.6 g/cm^3

Work out the mass of the cylinder.
Give your answer correct to 3 significant figures.

..... g

(Total for Question 10 is 3 marks)

Question 11

5 marks

June 2026 | 4MA1/2HR | Right-triangle trigonometry and area

11 The diagram shows a square $ABCD$ and a right-angled triangle EFG

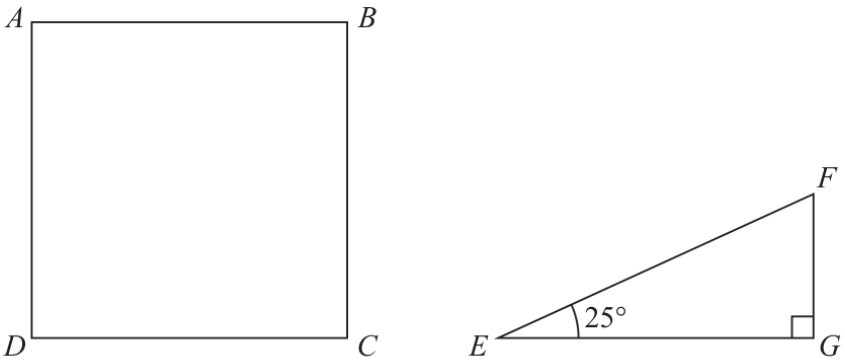


Diagram **NOT** accurately drawn

The area of square $ABCD$ is $36\,\text{cm}^2$
$DC = EG$

Work out the area of triangle EFG
Give your answer correct to one decimal place.
Show your working clearly.

..... cm^2

(Total for Question 11 is 5 marks)

Question 13

4 marks

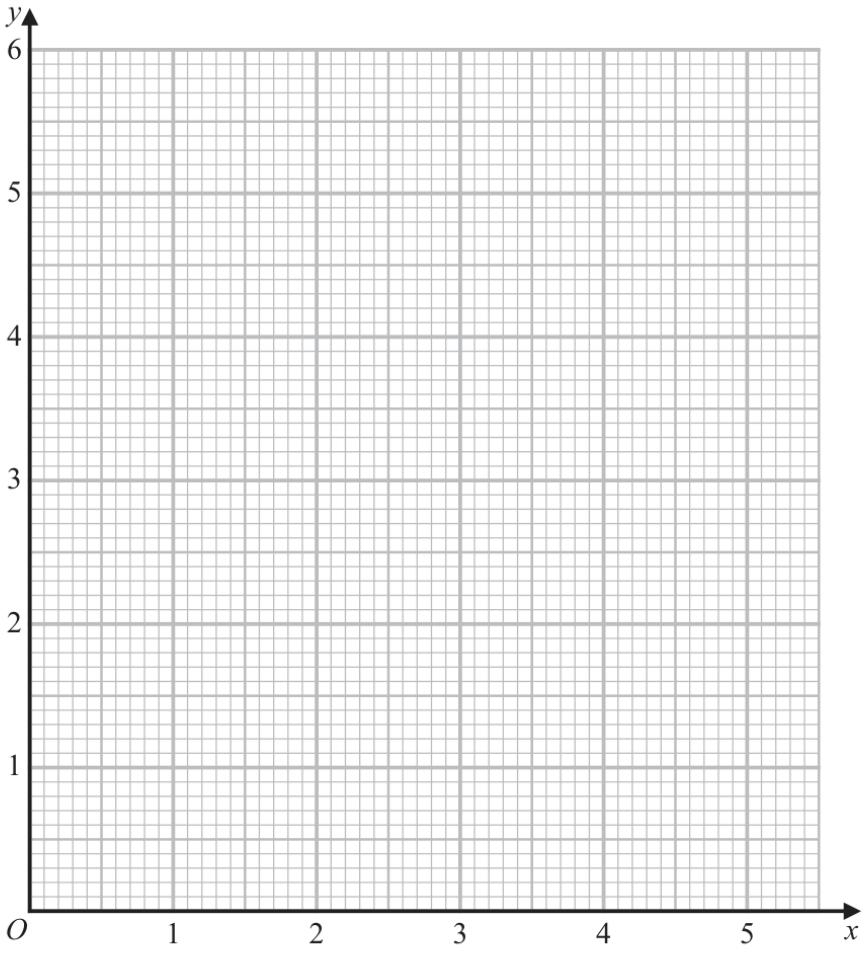
June 2026 | 4MA1/2HR | Function graph construction

13 (a) Complete the table of values for $y = x + \frac{1}{x}$

x	0.25	0.5	1	2	3	4	5
y	4.25			2.5	3.33		

(2)

(b) On the grid, draw the graph of $y = x + \frac{1}{x}$ for $0.25 \leqslant x \leqslant 5$



(2)

(Total for Question 13 is 4 marks)

Question 14

8 marks

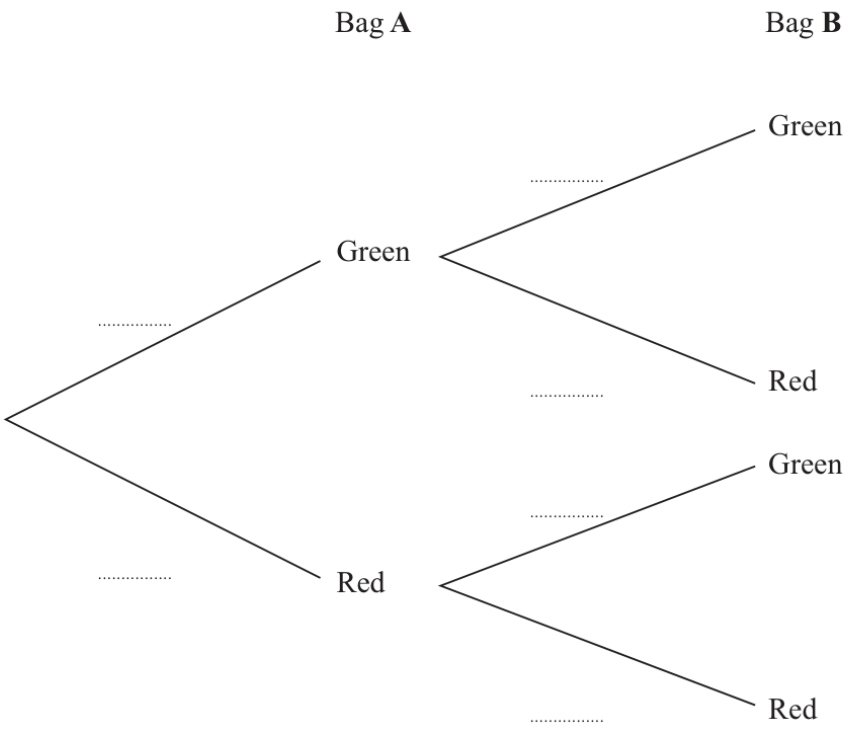
June 2026 | 4MA1/2HR | Independent probability and tree diagrams

14 Pras has 2 bags of counters, bag **A** and bag **B**

In bag **A**, there are 4 green counters and 3 red counters.
In bag **B**, there are 5 green counters and 1 red counter.

Pras is going to take at random a counter from bag **A** and a counter from bag **B**

(a) Complete the probability tree diagram.



(2)

(b) Work out the probability that Pras will take two green counters.

.....

(2)

Pras also has a third bag of counters, bag **C**
In bag **C**, there are only green counters and red counters.
All the original counters are back in bag **A** and bag **B**

Pras is going to take at random a counter from bag **A**, a counter from bag **B** and a counter from bag **C**

The probability that Pras will take three red counters is $\frac{3}{70}$

(c) Work out the probability that Pras will take 1 green counter and 2 red counters.

.....

(4)

(Total for Question 14 is 8 marks)

Question 16

2 marks

June 2026 | 4MA1/2HR | Algebraic indices

16 $\left(\frac{1}{\sqrt{a}}\right)^6 = a^n$

Work out the value of n

$n =$ .....

(Total for Question 16 is 2 marks)

Question 17

2 marks

June 2026 | 4MA1/2HR | Recurring decimal to fraction

17 Use algebra to show that $0.\dot{8}1\dot{4} = \frac{22}{27}$

(Total for Question 17 is 2 marks)

Question 19

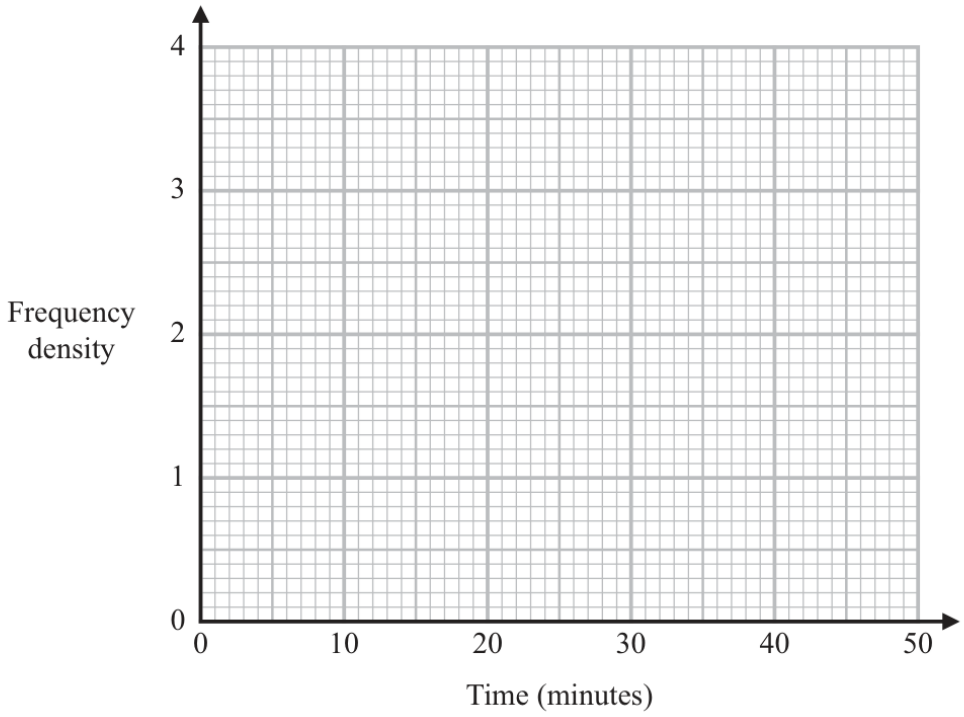
3 marks

June 2026 | 4MA1/2HR | Histograms

19 The table gives information about the times, in minutes, some people spent waiting to go on a rollercoaster.

Time (t minutes)	Frequency
$0 < t \leqslant 20$	14
$20 < t \leqslant 25$	12
$25 < t \leqslant 35$	32
$35 < t \leqslant 50$	30

On the grid, draw a histogram for this information.



(Total for Question 19 is 3 marks)

Question 21

3 marks

June 2026 | 4MA1/2HR | Bounds

21 $p = \dfrac{d-e}{f}$

$d = 6.6$ correct to 1 decimal place
$e = 2.8$ correct to 1 decimal place
$f = 0.47$ correct to 2 decimal places

Calculate the lower bound for the value of p
Give your answer correct to 3 significant figures.
Show your working clearly.

.....

(Total for Question 21 is 3 marks)