

Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Centre Number					Candidate Number				

Pearson Edexcel International GCSE (9–1)

Thursday 14 May 2026

Morning (Time: 2 hours)

Paper reference **4WM1H/01**

Mathematics A (Modular)

UNIT 1H

Higher Tier



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

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Without sufficient working, correct answers may be awarded no marks.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- **Calculators may be used.**
- You must **NOT** write anything on the formulae page.
- Anything you write on the formulae page will gain NO credit.

Information

- The total mark for this unit is 100.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ►

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International GCSE Mathematics

Formulae sheet – Higher Tier

Arithmetic series

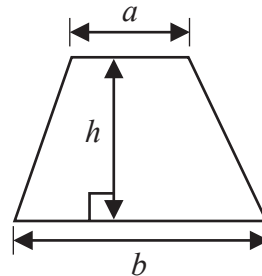
Sum to n terms, $S_n = \frac{n}{2} [2a + (n-1)d]$

The quadratic equation

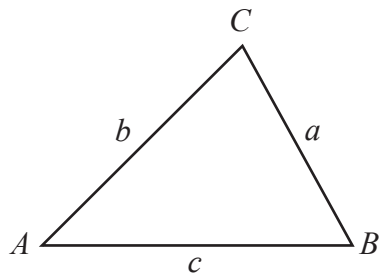
The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$ are given by:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\text{Area of trapezium} = \frac{1}{2}(a+b)h$$



Trigonometry



In any triangle ABC

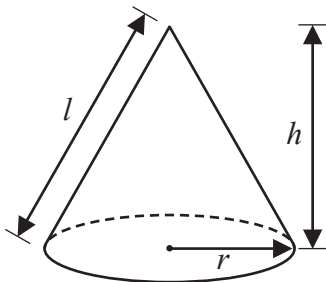
$$\text{Sine Rule } \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\text{Cosine Rule } a^2 = b^2 + c^2 - 2bc \cos A$$

$$\text{Area of triangle} = \frac{1}{2}ab \sin C$$

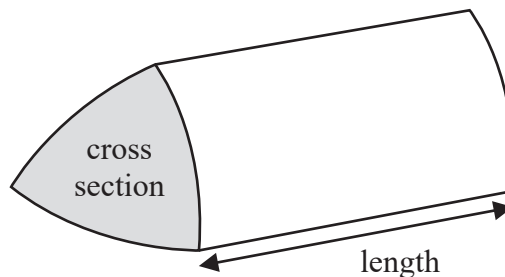
$$\text{Volume of cone} = \frac{1}{3}\pi r^2 h$$

$$\text{Curved surface area of cone} = \pi r l$$



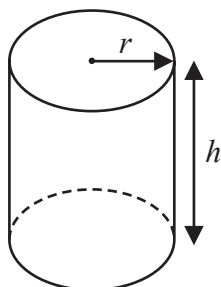
Volume of prism

= area of cross section $\times$ length



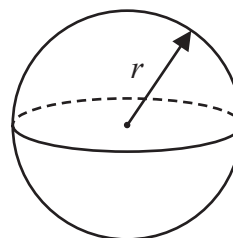
$$\text{Volume of cylinder} = \pi r^2 h$$

$$\text{Curved surface area of cylinder} = 2\pi r h$$



$$\text{Volume of sphere} = \frac{4}{3}\pi r^3$$

$$\text{Surface area of sphere} = 4\pi r^2$$



Answer ALL TWENTY FOUR questions

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Show that $4\frac{1}{7} - 2\frac{3}{5} = 1\frac{19}{35}$

(Total for Question 1 is 3 marks)

2

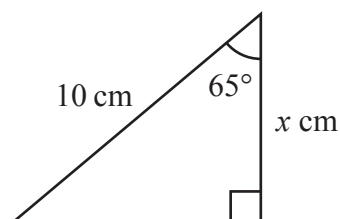


Diagram **NOT**
accurately drawn

Work out the value of x
Give your answer correct to 3 significant figures.

$x =$

(Total for Question 2 is 3 marks)

3 $20^{70} \times 20^8 = 20^n$

(a) Find the value of n

$n =$
(1)

$36^{80} \div 36^5 = 36^m$

(b) Find the value of m

$m =$
(1)

$(52^4)^{16} = 52^p$

(c) Find the value of p

$p =$
(1)

In a race, Dani ran a distance of 100 metres, correct to the nearest metre.

(d) Write down the lower bound for the distance.

..... metres
(1)

Dani ran this race in a time of 16.3 seconds, correct to one decimal place.

(e) Write down the upper bound for the time.

..... seconds
(1)

(Total for Question 3 is 5 marks)



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- 4 The diagram shows a shaded shape $ABCD$ made from a right-angled triangle ABD and a semicircle BCD

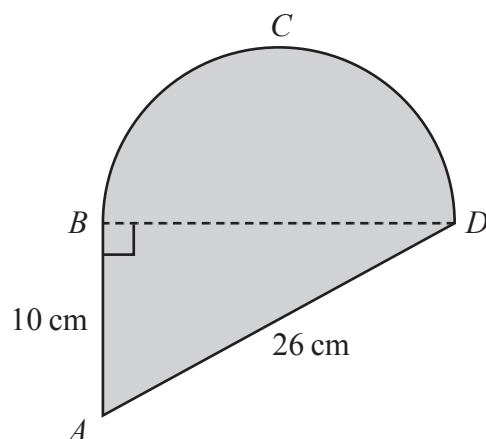


Diagram **NOT**
accurately drawn

$$AB = 10 \text{ cm} \quad AD = 26 \text{ cm} \quad \text{angle } ABD = 90^\circ$$

Work out the perimeter of the shaded shape.
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 4 is 5 marks)



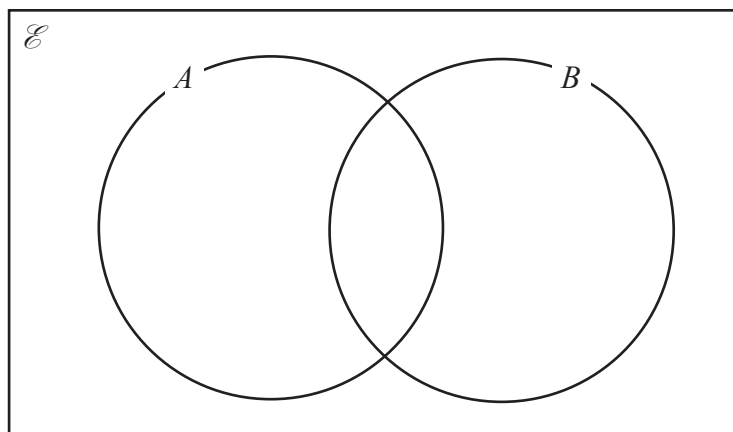
5 $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$

$$A = \{2, 3, 5, 7, 11\}$$

$$A \cap B = \{2, 5\}$$

$$B' = \{3, 4, 6, 7, 9, 11\}$$

(a) Complete the Venn diagram for this information.



(3)

A number is chosen at random from the universal set $\mathcal{E}$

(b) Write down the probability that this number is in the set $(A \cup B)'$

(1)

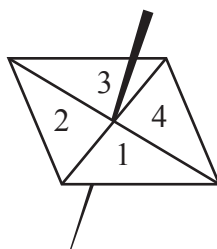
(Total for Question 5 is 4 marks)

6 Simplify $(4x^5y^6)^3$

(Total for Question 6 is 2 marks)



- 7 Here is a biased 4-sided spinner.



The table gives information about the probability that, when the spinner is spun once, it will land on each number.

Number	1	2	3	4
Probability	0.12	x	$2x$	0.16

Nevan spins the spinner 500 times.

Work out the expected number of times that the spinner lands on an even number.

(Total for Question 7 is 4 marks)

- 8 A block of wood has a mass of 480 kg
The wood has a density of 640 kg/m^3

Work out the volume of the block of wood.

..... m^3

(Total for Question 8 is 3 marks)



9 (a) Factorise $15g^4h - 20gh^3$

.....
(2)

(b) (i) Factorise $x^2 + 3x - 28$

.....
(2)

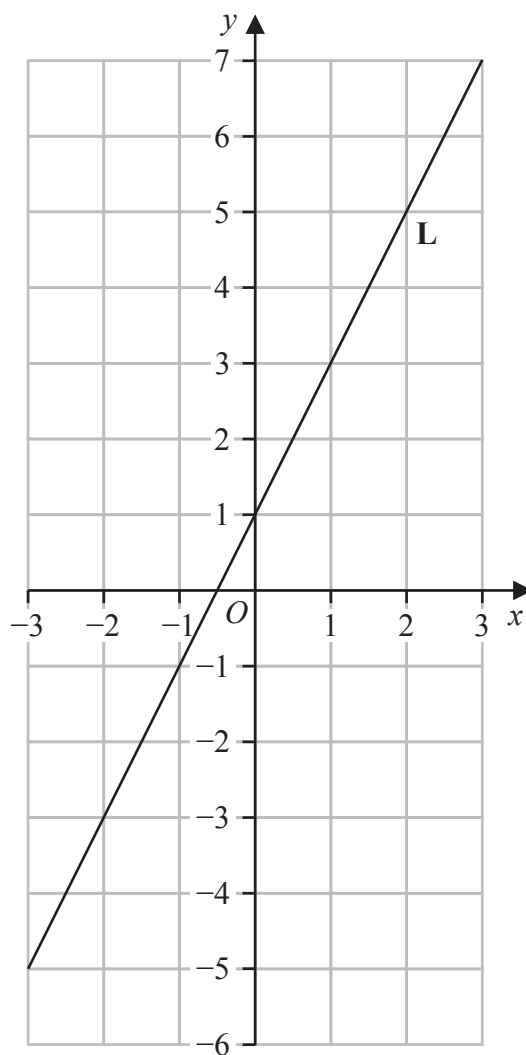
(ii) Hence, solve $x^2 + 3x - 28 = 0$

.....
(1)

(Total for Question 9 is 5 marks)



10 The line **L** is drawn on a grid.



Find an equation for **L**

(Total for Question 10 is 3 marks)

11 There are 40 counters in a bag.

25 of the counters are green

7 of the counters are blue

8 of the counters are red

Ben puts some extra blue counters and some extra red counters into the bag.

The number of blue counters added to the bag is twice as many as the number of red counters added to the bag.

Ben takes at random a counter from the bag.

The probability that he takes a green counter is $\frac{5}{11}$

How many of the extra counters that Ben put into the bag were blue?

(Total for Question 11 is 3 marks)



12 $\frac{2^{\frac{x}{3}}}{8^x} = 64$

- (a) Find the value of x
Show clear algebraic working.

$x = \dots\dots\dots$
(3)

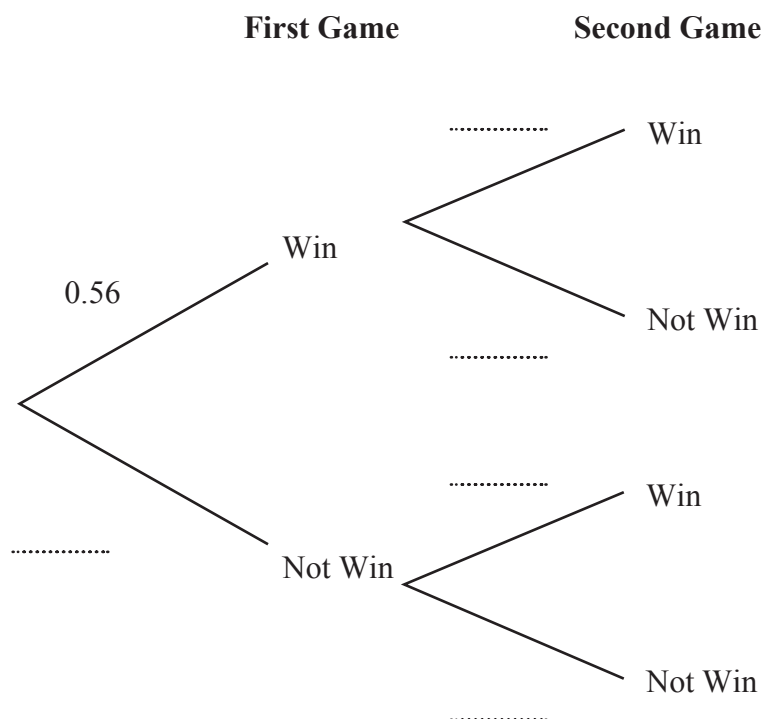
- (b) Expand and simplify $4t(t + 5)(2t - 3)$

$\dots\dots\dots$
(3)

(Total for Question 12 is 6 marks)



- 13 A team plays two games of football.
For each game, the probability that the team wins is 0.56
- (a) Complete the probability tree diagram.



(2)

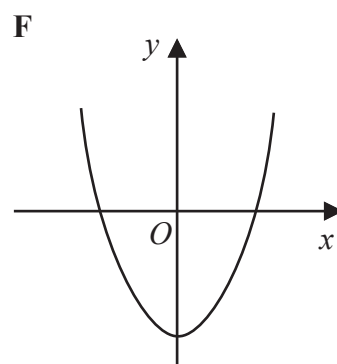
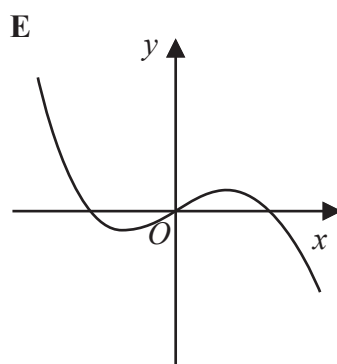
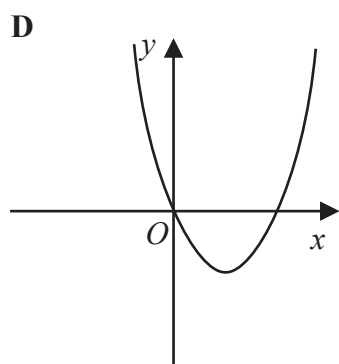
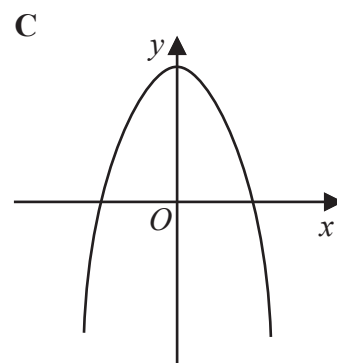
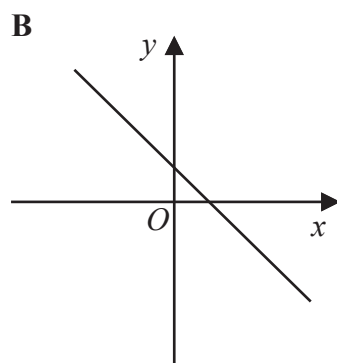
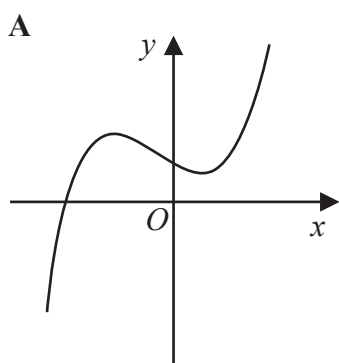
- (b) Work out the probability that the team wins both games.

(2)

(Total for Question 13 is 4 marks)



14 Here are six graphs.



(a) Write down the letter of the graph that could have the equation

(i) $y = x^2 - 3x$

.....
(1)

(ii) $y = -x^3 + 9x$

.....
(1)

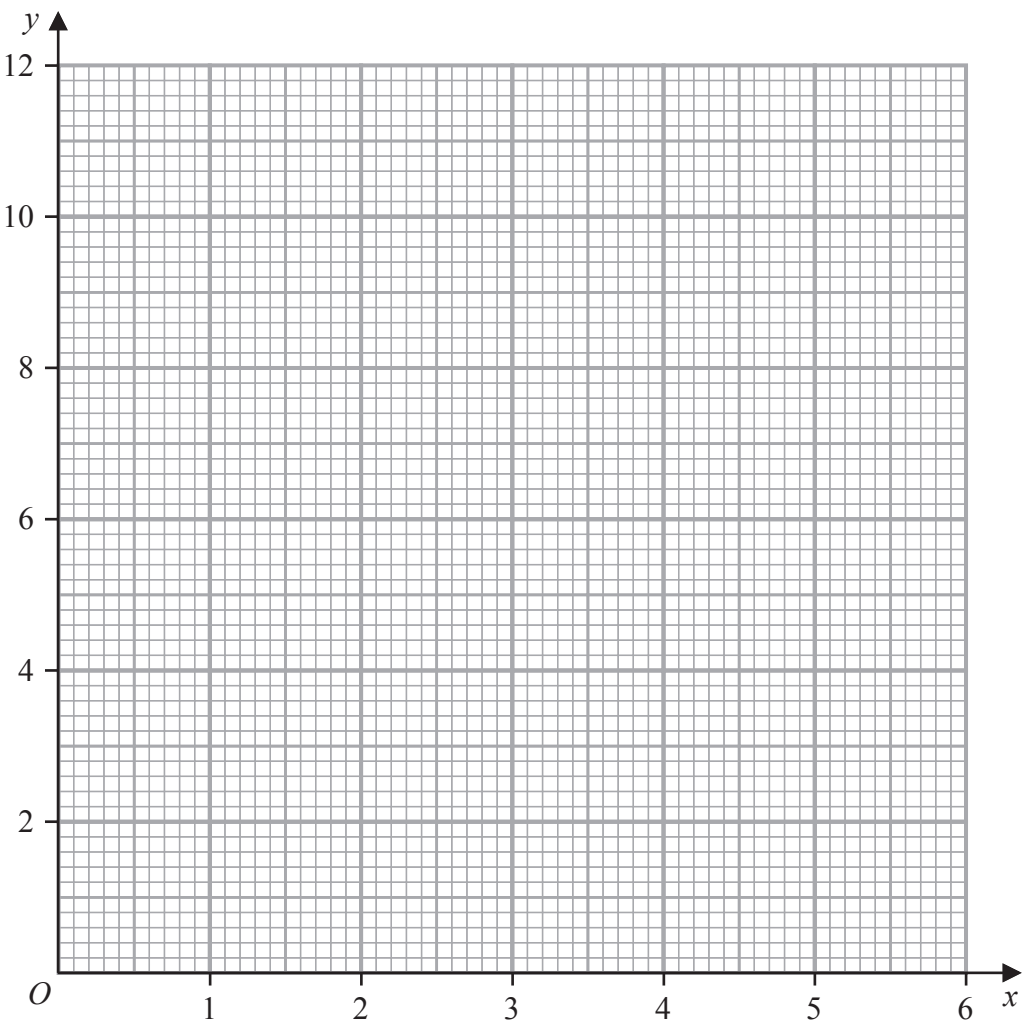


(b) Complete the table of values for $y = \frac{12}{x^2}$

x	1	1.5	2	3	4	5	6
y		5.33		1.33			0.33

(2)

(c) On the grid, draw the graph of $y = \frac{12}{x^2}$ for $1 \leq x \leq 6$



(2)

(Total for Question 14 is 6 marks)



15 The diagram shows triangle ABC

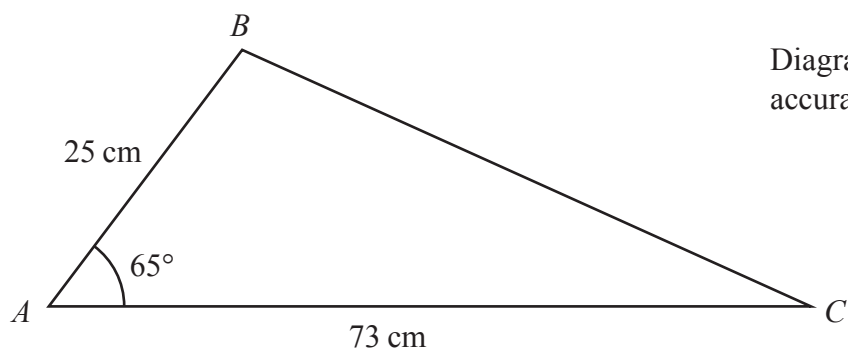


Diagram **NOT**
accurately drawn

$$AB = 25 \text{ cm}$$

$$AC = 73 \text{ cm}$$

$$\text{angle } BAC = 65^\circ$$

- (a) Work out the length of BC
Give your answer correct to 3 significant figures.

..... cm
(3)

- (b) Work out the area of the triangle.
Give your answer correct to 3 significant figures.

..... cm^2
(2)

(Total for Question 15 is 5 marks)



16 (a) Solve $x^2 - (2\sqrt{3})x - 13 = 0$

Give your solutions in the form $\sqrt{a} \pm b$ where a and b are integers.
Show your working clearly.

(3)

(b) Show that $\frac{\sqrt{20}}{\sqrt{5} + 2}$ can be written in the form $c - \sqrt{d}$ where c and d are integers.

(3)

(Total for Question 16 is 6 marks)



17 The line **L** is perpendicular to the line with equation $y = 7 + 4x$

L passes through the point *A* with coordinates $\left(0, \frac{19}{2}\right)$

L crosses the *x*-axis at the point *B*

Find the area of triangle *AOB* where *O* is the origin.

Show your working clearly.

(Total for Question 17 is 4 marks)



18 The final velocity, v m/s, of an object is given by

$$v = 2\left(\frac{s}{t}\right) - u$$

where

$s = 100$ correct to the nearest integer

$t = 1.68$ correct to 2 decimal places

$u = 0.5$ correct to 1 decimal place

By considering bounds, work out the value of v to a suitable degree of accuracy.
Show your working clearly.

(Total for Question 18 is 5 marks)



19 The diagram shows cuboid $PQRSTUVW$

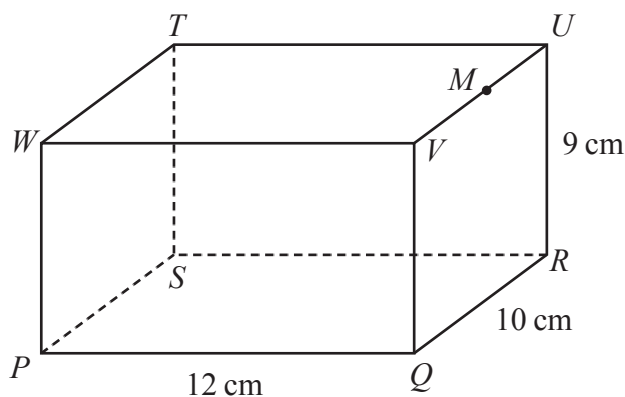


Diagram **NOT**
accurately drawn

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$$PQ = 12 \text{ cm} \quad QR = 10 \text{ cm} \quad RU = 9 \text{ cm}$$

M is the midpoint of VU

Work out the size of the angle between line MP and plane $PQRS$
Give your answer correct to one decimal place.

(Total for Question 19 is 3 marks)



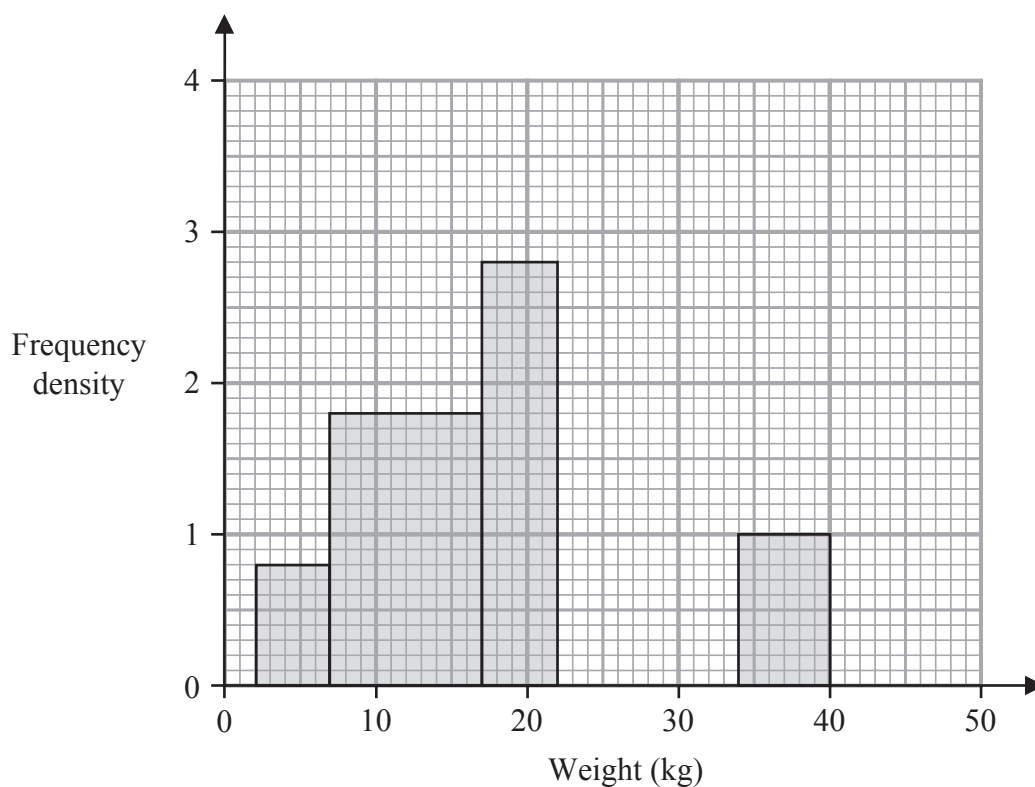
20 Express $\left(\frac{5}{4x-7} - \frac{3}{3x-5}\right) \div \frac{9x^2-16}{6x^2-7x-5}$ as a single fraction in its simplest form.

Show clear algebraic working.

(Total for Question 20 is 4 marks)



21 The incomplete histogram shows information about the weights, in kg, of some parcels.



No parcels weigh less than 2 kg

No parcels weigh more than 40 kg

Half of the parcels weigh between 22 kg and 34 kg

Complete the histogram by drawing a bar to represent the parcels that weigh between 22 kg and 34 kg

(Total for Question 21 is 3 marks)



- 22 A bag contains x marbles.
12 of the marbles are pink and the rest are yellow.

Greta takes at random 2 marbles from the bag.

The probability that Greta takes a pink marble and a yellow marble is $\frac{18}{47}$

Work out the value of x
Show clear algebraic working.

$x = \dots\dots\dots$

(Total for Question 22 is 5 marks)



23 OPQ and OAB are sectors of a circle, centre O

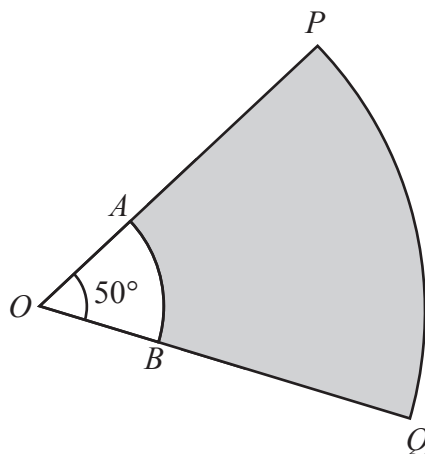


Diagram **NOT**
accurately drawn

Angle $POQ = 50^\circ$

A is the point on OP such that $OA = \frac{1}{4}OP$

The area of the shaded region is $\frac{243}{16} \pi \text{ cm}^2$

Work out the perimeter of the shaded region.

Give your answer in the form $a\pi + b$ where a and b are constants.

Show your working clearly.

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..... cm

(Total for Question 23 is 6 marks)

Turn over for Question 24



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24 Express $22 - 3x^2 + 30x$ in the form $a - b(x - c)^2$ where a , b and c are integers.

(Total for Question 24 is 3 marks)

TOTAL FOR UNIT IS 100 MARKS



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