

Please check the examination details below before entering your candidate information

Candidate surname					Other names				
Centre Number					Candidate Number				

Pearson Edexcel International GCSE

Thursday 14 May 2026

Morning (Time: 2 hours)

Paper reference **4MA1/1HR**

Mathematics A
PAPER 1HR
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.
- Answer **all** questions.
- Without sufficient working, correct answers may be awarded no marks.
- 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 paper 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

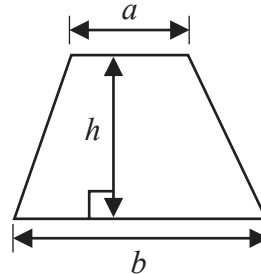
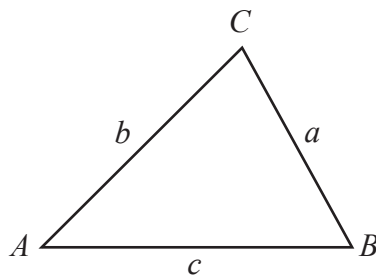
Sum to n terms, $S_n = \frac{n}{2} [2a + (n-1)d]$

The quadratic equation

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

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

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

**Trigonometry**

In any triangle ABC

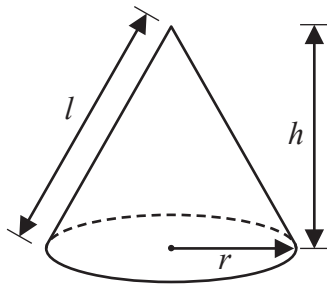
Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

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

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

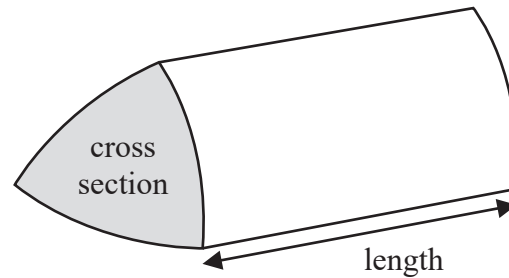
Volume of cone $= \frac{1}{3}\pi r^2 h$

Curved surface area of cone $= \pi r l$



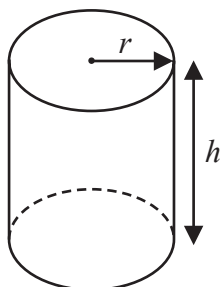
Volume of prism

$= \text{area of cross section} \times \text{length}$



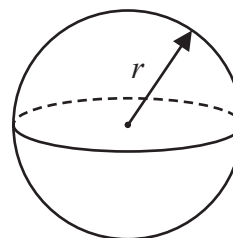
Volume of cylinder $= \pi r^2 h$

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



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

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



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Answer ALL TWENTY SIX questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

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

(Total for Question 1 is 3 marks)



- 2 Write 504 as a product of powers of its prime factors.
Show your working clearly.

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(Total for Question 2 is 3 marks)

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

(1)

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

(1)

(Total for Question 3 is 2 marks)

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- 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)



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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

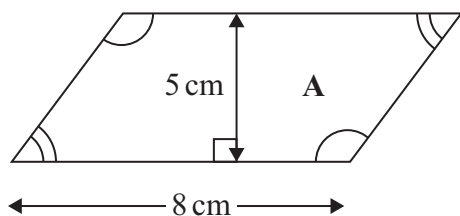
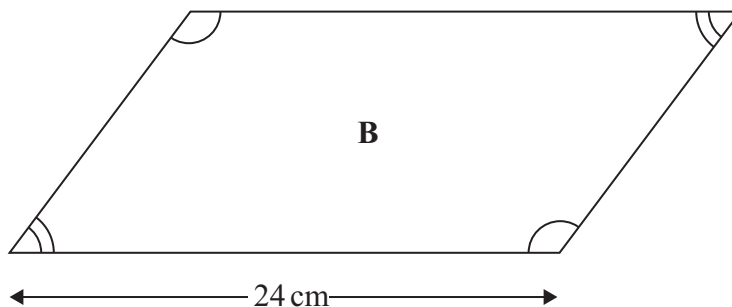
There are 400 counters in the bag.

Work out the number of red counters in the bag.

(Total for Question 5 is 4 marks)



6

Diagram **NOT**
accurately drawn

A and B are similar parallelograms.

Work out the area of B

..... cm^2

(Total for Question 6 is 3 marks)

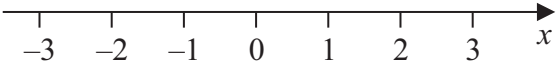


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7



(a) Represent the inequality $x < 1$ on the number line above.

(1)

$2 \leq y + 3 < 7$
 y is an integer.

(b) Write down all the possible values of y

(2)

(c) Solve the inequality $8 - 5w > -10$

(2)

(Total for Question 7 is 5 marks)

8



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

.....
(Total for Question 8 is 2 marks)

9 Caleb owns 11 sheep.

The mean weight of all 11 sheep is 77 kg

The mean weight of 8 of the sheep is 75.2 kg

Work out the mean weight of the other 3 sheep.

..... kg

(Total for Question 9 is 3 marks)



P 7 9 7 8 6 A 0 9 2 8

- 10** Arwa invests 200 000 yen in a savings account for 3 years.
She gets 1.4% per year compound interest.

Work out how much money Arwa will have in her savings account at the end of 3 years.
Give your answer correct to the nearest yen.

..... yen

(Total for Question 10 is 3 marks)

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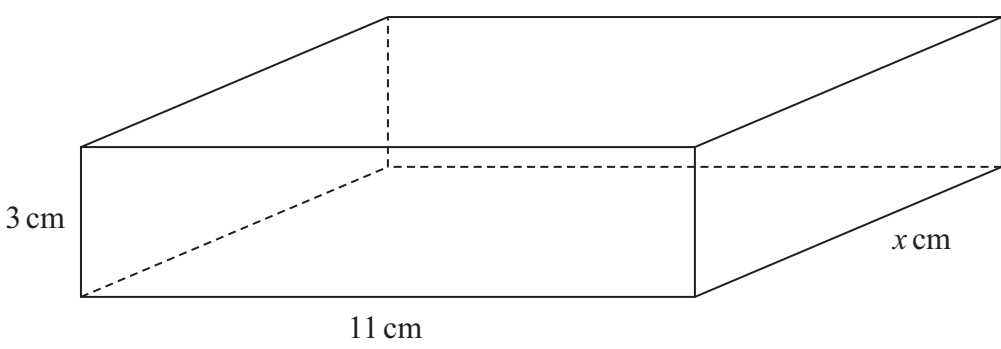
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11 The diagram shows a solid cuboid.

Diagram **NOT**
accurately drawn



The cuboid measures 3 cm by 11 cm by x cm

The volume of the cuboid is 264 cm^3

Work out the total surface area of the cuboid.

..... cm^2

(Total for Question 11 is 4 marks)



12 Solve the simultaneous equations

$$\begin{aligned} 4x + 4y &= 5 \\ x + 2y &= 1 \end{aligned}$$

Show clear algebraic working.

$x =$

$y =$

(Total for Question 12 is 3 marks)

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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)



14 The cumulative frequency table gives information about the ages, in years, of 80 people who went to a cinema on Saturday.

Age (a years)	Cumulative frequency
$0 < a \leq 10$	19
$0 < a \leq 20$	37
$0 < a \leq 30$	52
$0 < a \leq 40$	63
$0 < a \leq 50$	73
$0 < a \leq 60$	80

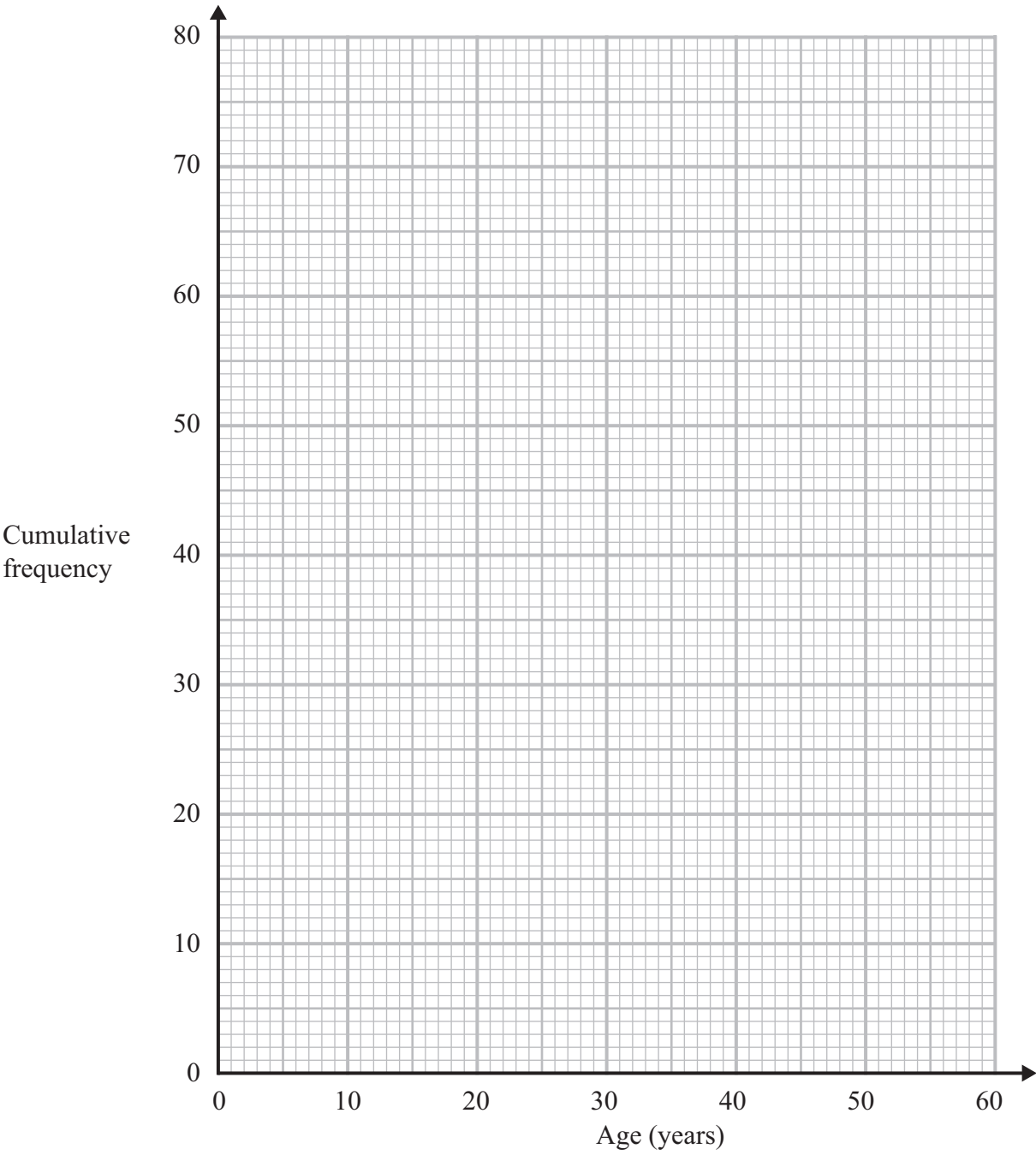
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(a) On the grid below, draw a cumulative frequency graph for this information.



(2)

(b) Use your graph to find an estimate for the median age of the 80 people.

..... years
(1)

(c) Use your graph to find an estimate for the number of the 80 people aged 16 and under.

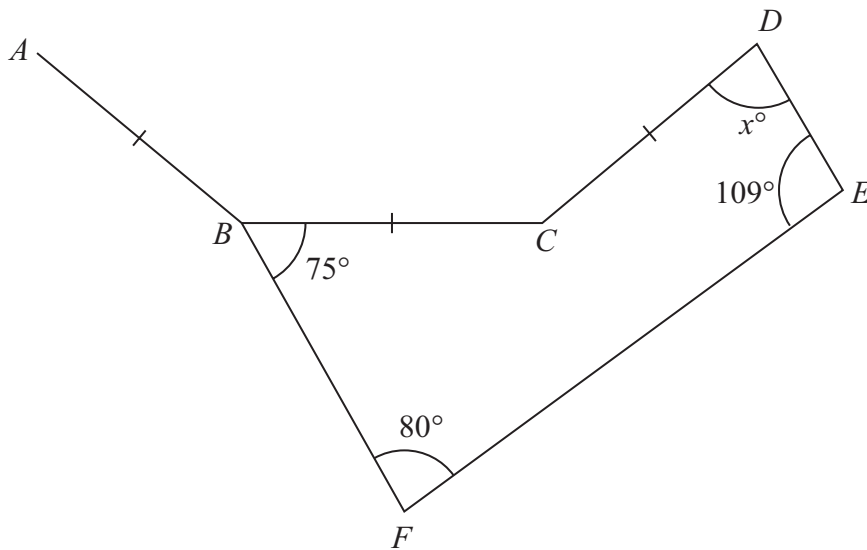
.....
(1)

(Total for Question 14 is 4 marks)



P 7 9 7 8 6 A 0 1 5 2 8

15



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$BCDEF$ is a pentagon.

AB , BC and CD are three sides of a regular 10-sided polygon.

Find the value of x

$x = \dots\dots\dots$

(Total for Question 15 is 3 marks)



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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)



17 $y = x^3 + 5x^2 - 8x$

(a) Find $\frac{dy}{dx}$

$$\frac{dy}{dx} = \dots\dots\dots (2)$$

The curve with equation $y = x^3 + 5x^2 - 8x$ has two stationary points, P and Q
 The x -coordinate of P is less than the x -coordinate of Q

(b) Work out the coordinates of P
 Show clear algebraic working.

$$(\dots\dots\dots, \dots\dots\dots) (3)$$

(Total for Question 17 is 5 marks)



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

1

1

2

2

2

4

5

5

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)

19 P, Q, R and S are points on a circle, centre O

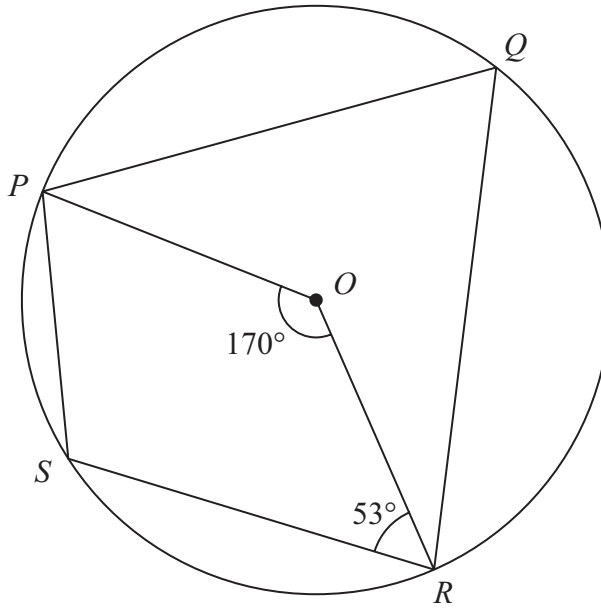


Diagram **NOT**
accurately drawn

Angle $POR = 170^\circ$

Angle $ORS = 53^\circ$

Find the size of angle SPO

Give a reason for each stage of your working.

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(Total for Question 19 is 5 marks)



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20 y is directly proportional to t^2

$$y = 40 \text{ when } t = 4$$

t is directly proportional to the cube root of x

$$t = 12 \text{ when } x = 8$$

Work out the value of y when $x = 27$

$$y = \dots\dots\dots$$

(Total for Question 20 is 5 marks)



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

Of these students

32 students study French

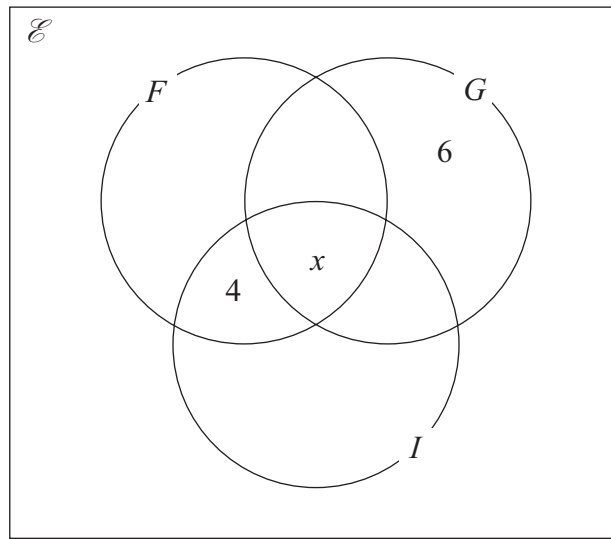
24 students study German

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

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

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

$$\dots\dots\dots (2)$$

(Total for Question 21 is 5 marks)



22 The diagram shows triangle ABC

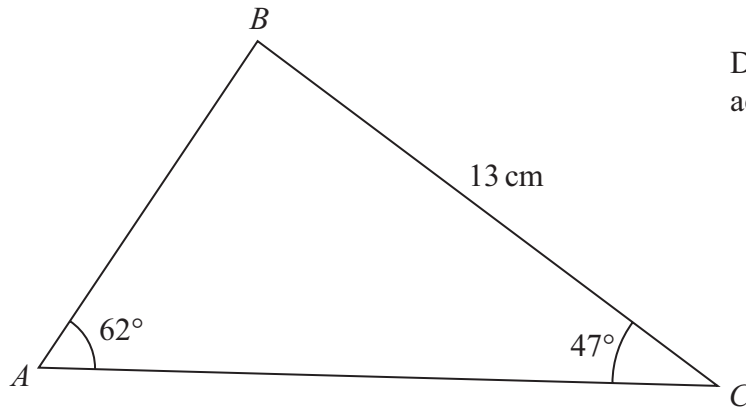


Diagram **NOT**
accurately drawn

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

..... cm^2

(Total for Question 22 is 4 marks)



23 The function f is such that $f(x) = \frac{1}{x}$

(a) Write down the value of x that cannot be included in any domain of f

(1)

The function g is such that $g(x) = 4x^2 - 8x + 15$
 The domain of g is $x \geq 1$

(b) Work out $gf(0.5)$

(2)

(c) Express the inverse function g^{-1} in the form $g^{-1}(x) = \dots$

$g^{-1}(x) = \dots$
 (4)

(Total for Question 23 is 7 marks)



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24 The centre of a circle is the point with coordinates $(3, 1)$

The point P with coordinates $(7, 6)$ lies on the circle.

The line L is the tangent to the circle at P

Find an equation for L

Give your answer in the form $ax + by + c = 0$ where a , b and c are integers.

.....
(Total for Question 24 is 4 marks)



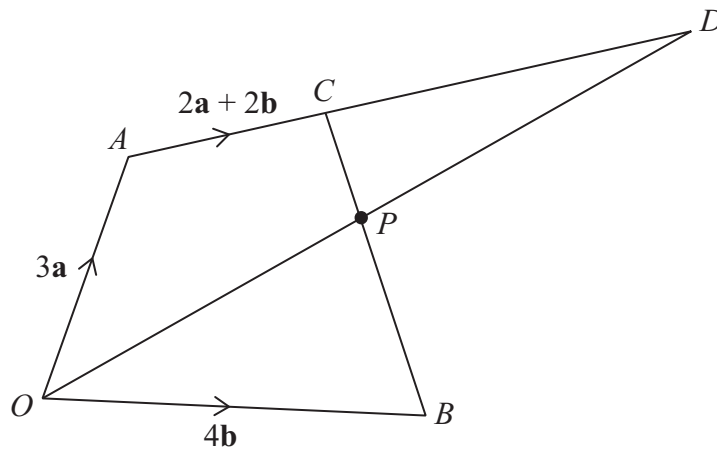


Diagram **NOT**
accurately drawn

$$\vec{OA} = 3\mathbf{a} \quad \vec{OB} = 4\mathbf{b} \quad \vec{AC} = 2\mathbf{a} + 2\mathbf{b} \quad \vec{CD} = \frac{3}{2} \times \vec{AC}$$

P is the point on BC such that OPD is a straight line.

- (a) Find $\vec{OD}$ in terms of $\mathbf{a}$ and $\mathbf{b}$
Give your answer in its simplest form.

(2)

- (b) Find the ratio $OP : PD$
Show your working clearly.



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.....
(4)

(Total for Question 25 is 6 marks)

Turn over for question 26



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)

TOTAL FOR PAPER IS 100 MARKS

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