Please check the examination details below before entering your candidate information

Candidate surname	Other names

Centre Number | Candidate Number

Pearson Edexcel International GCSE

Wednesday 6 November 2024

Morning (Time: 2 hours)

Paper reference **4MA1/1F**

Mathematics A
PAPER 1F
Foundation 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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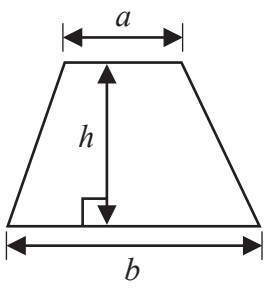
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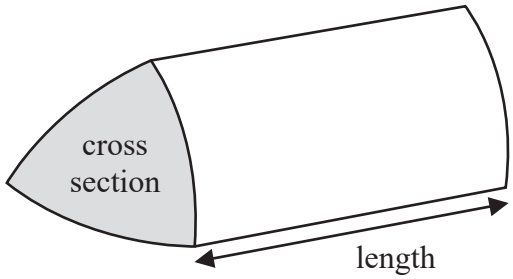
International GCSE Mathematics

Formulae sheet – Foundation Tier

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

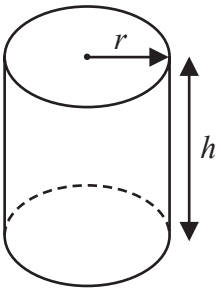


Volume of prism = area of cross section × length



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

Curved surface area of cylinder = $2\pi rh$



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Answer ALL TWENTY SEVEN questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 The table gives the lengths, in metres, of five road tunnels.

Name of tunnel	Length of tunnel (metres)
Arlberg	13 972
Hsuehshan	12 940
Laerdal	24 512
St Gotthard	16 918
Jinpingshan	17 540

(a) Which of these five tunnels has the greatest length?

.....

(1)

(b) Write down the value of the 9 in the number 13 972

.....

(1)

The length of one of the tunnels, when rounded to the nearest thousand, is 17 000 metres.

(c) Write down the name of this tunnel.

.....

(1)

(d) Write the number 12 940 in words.

.....

(1)

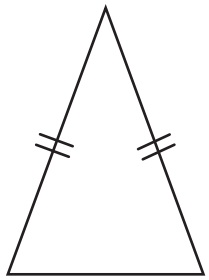
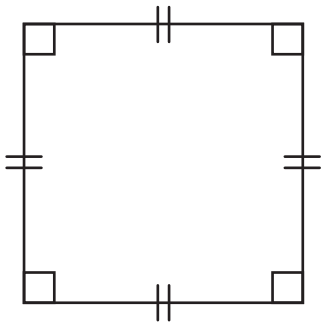
(e) Work out the total length of the Arlberg tunnel and the Jinpingshan tunnel.

..... metres

(1)

(Total for Question 1 is 5 marks)

2 Here are two shapes.

Triangle	Quadrilateral
	

(a) Write down the mathematical name of the

(i) triangle,

.....

(1)

(ii) quadrilateral.

.....

(1)

(b) On the triangle, draw the line of symmetry.

(1)

(c) Write down the order of rotational symmetry of the quadrilateral.

.....

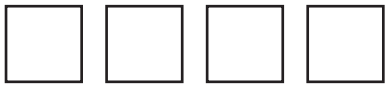
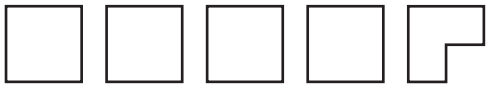
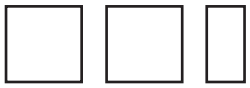
(1)

(Total for Question 2 is 4 marks)

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3 The pictogram gives information about the number of kilometres Thomas travelled on Monday, on Tuesday, on Wednesday and on Thursday.

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	


represents 4 kilometres

(a) Write down the number of kilometres Thomas travelled on Tuesday.

..... kilometres
(1)

On Wednesday, Thomas travelled further than he did on Thursday.

(b) How much further?

..... kilometres
(2)

On Friday, Thomas travelled 13 kilometres.

(c) Show this information on the pictogram.

(1)

(Total for Question 3 is 4 marks)

4 The table shows information about the temperatures at different heights above sea level.

Height above sea level (metres)	Temperature (°C)
14 000	−60
12 000	−58
9000	−50
7000	−40
6000	−32
4000	−17
2000	−1
0	12

(a) Work out the difference in temperature between a height of 0 m and a height of 12 000 m

..... °C

(1)

(b) Work out the difference in temperature between a height of 4000 m and a height of 6000 m

..... °C

(1)

(c) At what height is the temperature 10°C warmer than the temperature at a height of 9000 m?

..... m

(1)

(Total for Question 4 is 3 marks)

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5 (a) Simplify $8d - 4d + 7d$

.....

(1)

(b) Simplify $m \times 10p$

.....

(1)

(c) Solve $x + 5 = -19$

$x =$ .....

(1)

(d) Solve $\frac{y}{8} = 6$

$y =$ .....

(1)

(e) Simplify $a \times a \times a \times a$

.....

(1)

$k = 8$ and $n = 12$

(f) Work out the value of $9k - 4n$

.....

(2)

(Total for Question 5 is 7 marks)

6 Pierre used 2358 units of water last year.

Each unit of water cost 0.28 euros.

Pierre has already paid for some of the water he used.
He paid 42 euros each month last year.

Work out how much more Pierre has to pay for the water he used last year.

..... euros

(Total for Question 6 is 4 marks)

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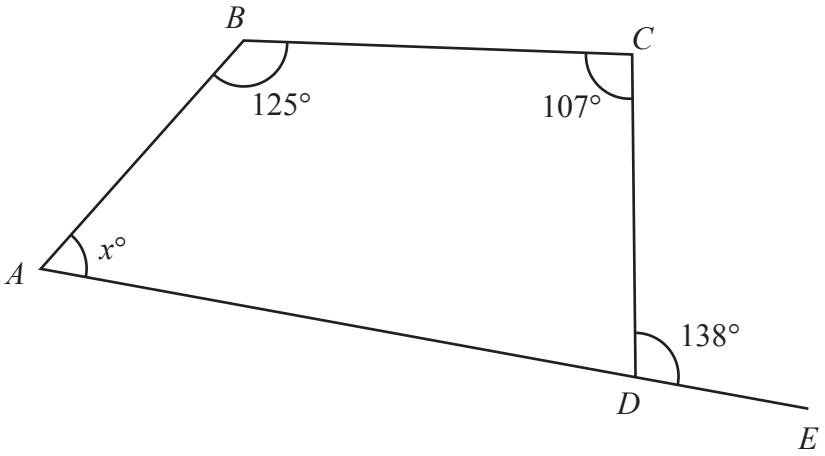


Diagram **NOT** accurately drawn

ABCD is a quadrilateral.

ADE is a straight line.

Work out the value of x
Give a reason for each stage of your working.

$x =$ .....

(Total for Question 7 is 4 marks)

8 There are 80 cars in a car park.

27 of the cars are red
10 of the cars are blue
the rest of the cars are white

One of the cars in the car park is chosen at random.

(a) Write down the probability that this car is red.

.....

(1)

(b) Find the probability that this car is white.

.....

(2)

(Total for Question 8 is 3 marks)

9 15 identical pencil cases cost 41.25 Swiss francs.

Work out the cost of 52 of these pencil cases.

..... Swiss francs

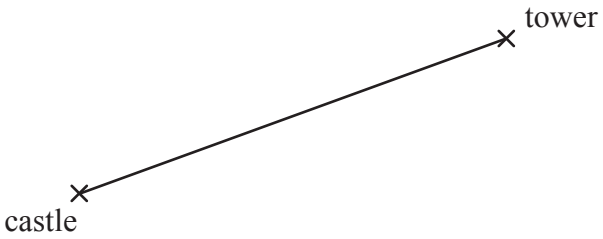
(Total for Question 9 is 2 marks)

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10 The scale diagram shows the positions of a castle and a tower.

1 cm represents 1.5 km



Angela walks from the castle to the tower along a straight path.

She takes 18 minutes to walk each km.

Work out how many minutes Angela takes to walk from the castle to the tower.

..... minutes

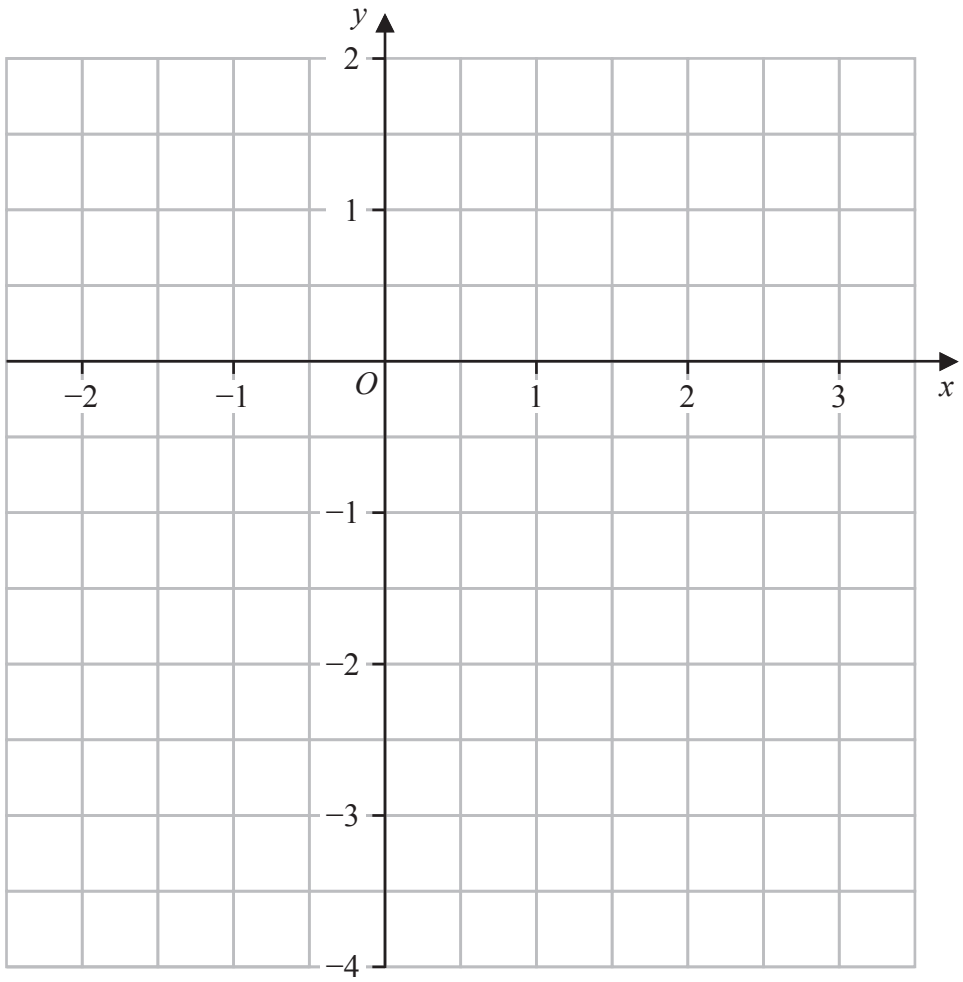
(Total for Question 10 is 3 marks)

11 Make d the subject of the formula $c = 8d + 5$

.....

(Total for Question 11 is 2 marks)

12 On the grid below, draw the graph of $y = \frac{1}{2}x - 1$ for values of x from -2 to 3



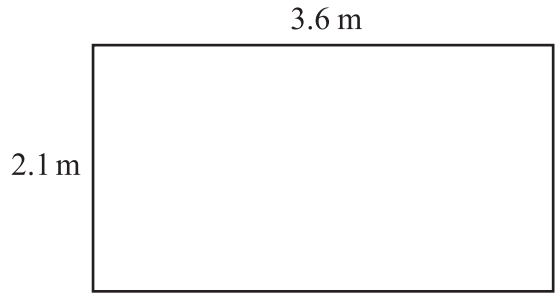
(Total for Question 12 is 3 marks)

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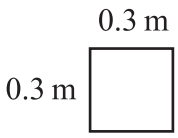
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13 The diagram shows a rectangular wall and a square tile.

Diagram **NOT** accurately drawn



Wall



Tile

Hamish wants to cover all the wall with tiles.

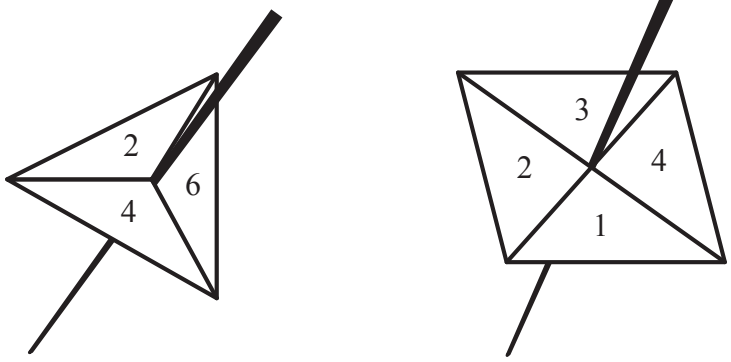
The tiles are sold in boxes.
There are 6 tiles in each box.
Each box of tiles costs £17.50

Work out the total cost of the tiles Hamish needs.

£.....

(Total for Question 13 is 4 marks)

14 Kate has a fair triangular spinner and a fair square spinner.



The triangular spinner can land on 2 or 4 or 6
The square spinner can land on 1 or 2 or 3 or 4

Kate spins each spinner once.
She adds the number the triangular spinner lands on to the number the square spinner lands on to get her score.

(a) Complete the table to show all possible scores.
Four of the scores have been done for you.

		Square spinner			
		1	**2**	**3**	**4**
Triangular spinner	**2**	3	4		
	4			7	
	6				10

(2)

Kate spins each spinner once.

(b) Find the probability that her score is 9 or less.

.....

(2)

(Total for Question 14 is 4 marks)

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15 Rema buys 140 plants.

35% of the 140 plants cost \$6 each.

$\frac{1}{4}$ of the 140 plants cost \$8 each.

The rest of the 140 plants cost \$10 each.

Work out the total cost of the 140 plants.

\$.....

(Total for Question 15 is 4 marks)

16 By rounding each number to one significant figure, work out an estimate for

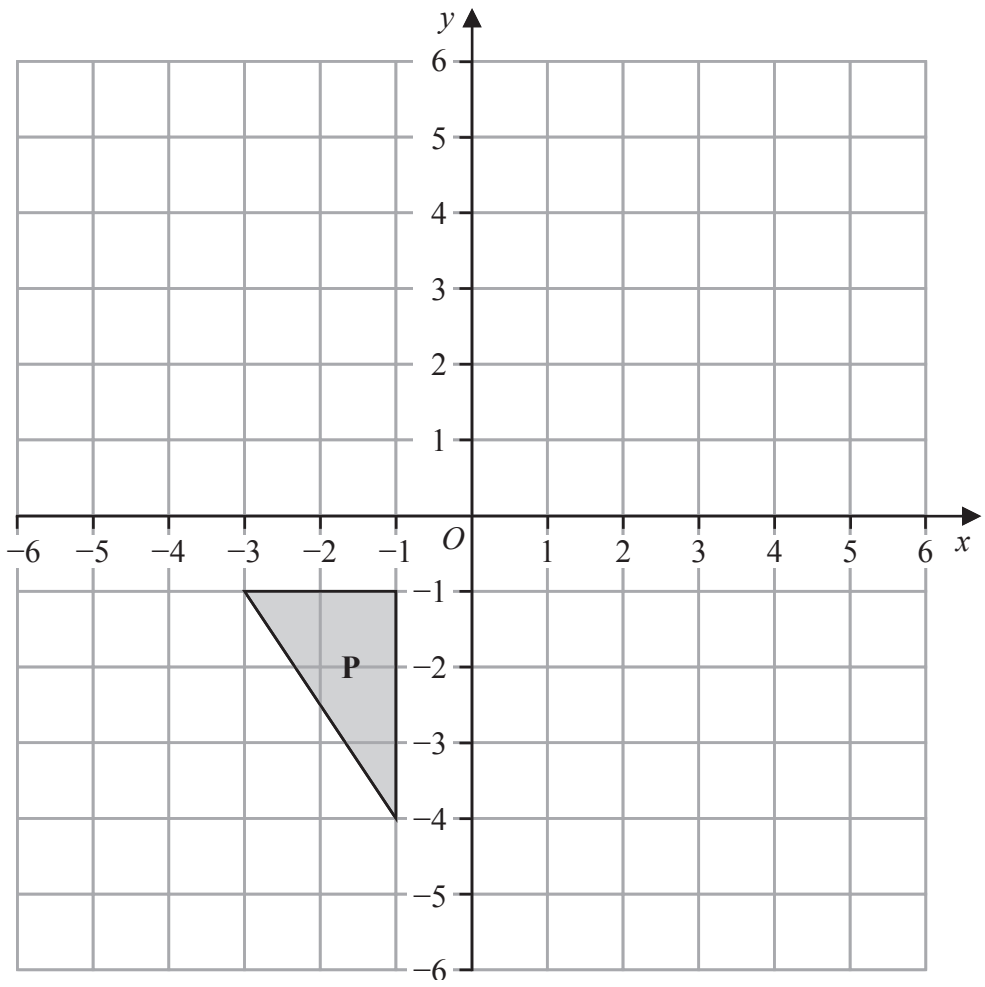
$$31.4 \times 48.7$$

Show your working clearly.

.....

(Total for Question 16 is 2 marks)

17



Reflect shape **P** in the line $x = 1$

(Total for Question 17 is 2 marks)

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18 The table shows some information about the hourly rates of pay of 60 workers.

Hourly rate of pay (p dollars)	**Frequency**
$10 < p \leqslant 15$	18
$15 < p \leqslant 20$	16
$20 < p \leqslant 25$	14
$25 < p \leqslant 30$	8
$30 < p \leqslant 35$	4

(a) Write down the modal class.

.....

(1)

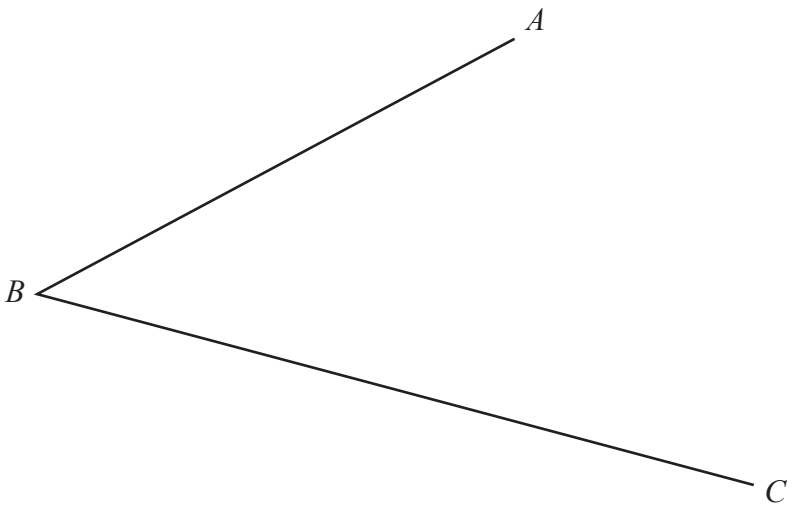
(b) Work out an estimate for the mean hourly rate of pay of the 60 workers.

..... dollars

(4)

(Total for Question 18 is 5 marks)

19 Use ruler and compasses only to construct the bisector of angle *ABC*
You must show all your construction lines.



(Total for Question 19 is 2 marks)

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20 (a) Simplify $\left(p^3\right)^5$

.....

(1)

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

.....

(2)

(c) Solve $\dfrac{2x + 5}{3} = 4 - x$

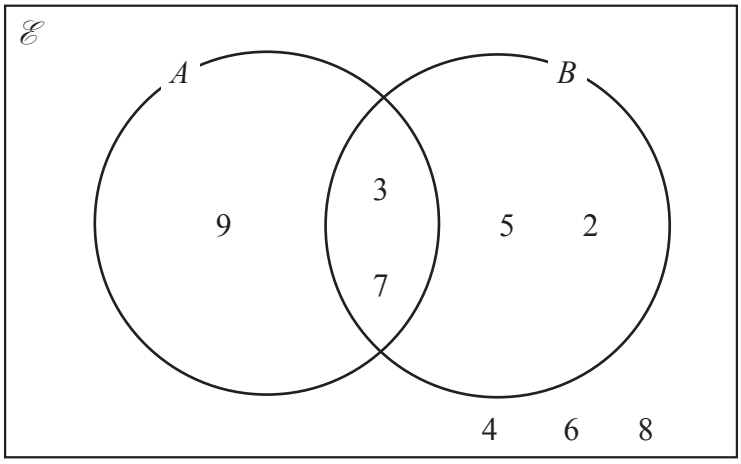
Show clear algebraic working.

$x =$ .....

(3)

(Total for Question 20 is 6 marks)

21 Here is a Venn diagram.



(a) List the members of the set B

.....

(1)

(b) List the members of the set $A \cap B$

.....

(1)

(c) List the members of the set A'

.....

(1)

(Total for Question 21 is 3 marks)

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22 The diagram shows a cylinder.

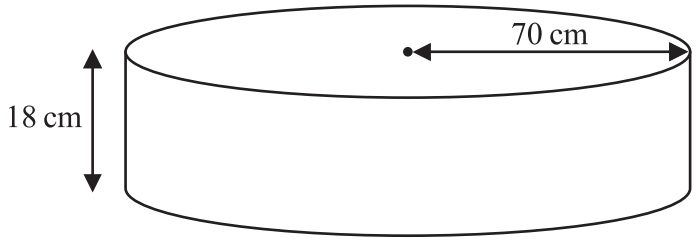


Diagram **NOT** accurately drawn

The radius of the cylinder is 70 cm
The height of the cylinder is 18 cm

Work out the volume of the cylinder.
Give your answer in litres correct to the nearest litre.

..... litres

(Total for Question 22 is 4 marks)

23 $A = 2^3 \times 5^4 \times 7 \times 11$

$B = 2^2 \times 5^2 \times 7^2$

$C = 2^2 \times 5^3 \times 7^4$

Find the highest common factor (HCF) of A, B and C
Write your answer as a product of prime factors.

.....

(Total for Question 23 is 2 marks)

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24 Shop **A** and Shop **B** have offers for buying the same type of laptop.

The normal price of the laptop in Shop **A** is different to the normal price of the laptop in Shop **B**

Shop A	**Shop B**
Our normal price £475 Get 16% off our normal price	Get 15% off our normal price Only pay £408

Which shop gives more money off their normal price?
Show your working clearly.

(Total for Question 24 is 4 marks)

25 (a) (i) Factorise $x^2 + 5x - 24$

.....

(2)

(ii) Hence, solve $x^2 + 5x - 24 = 0$

.....

(1)

(b) Solve the inequality $3y + 5 > 7y - 10$

Show clear algebraic working.

.....

(3)

(Total for Question 25 is 6 marks)

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26 (a) Write 8.4×10^{-5} as an ordinary number.

.....

(1)

(b) Work out $\left(6.5 \times 10^{-40}\right) \times \left(8 \times 10^{185}\right)$
Give your answer in standard form.

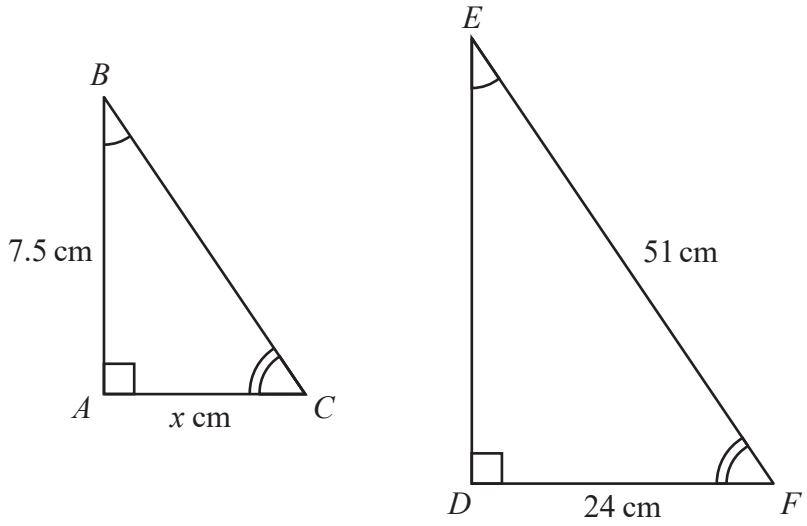
.....

(2)

(Total for Question 26 is 3 marks)

Turn over for Question 27

27 Here are two similar triangles.



Diagrams **NOT** accurately drawn

Work out the value of x
Show your working clearly.

$x =$ .....

(Total for Question 27 is 5 marks)

TOTAL FOR PAPER IS 100 MARKS

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