Write your name here

Surname	Other names

Pearson Edexcel International GCSE

Centre Number | Candidate Number

Mathematics A

Paper 1FR

Foundation Tier

Thursday 21 May 2015 – Morning
Time: 2 hours

Paper Reference
4MA0/1FR

You must have:
Ruler graduated in centimetres and millimetres, protractor, 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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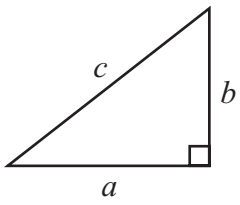
P 4 4 3 9 0 A 0 1 2 0

PEARSON

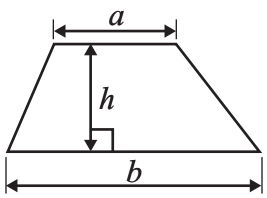
International GCSE MATHEMATICS

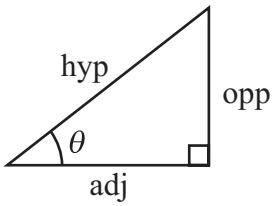
FORMULAE SHEET – FOUNDATION TIER

Pythagoras' Theorem
$a^2 + b^2 = c^2$



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





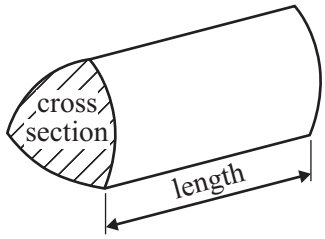
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

or $\sin\theta = \frac{\text{opp}}{\text{hyp}}$

$\cos\theta = \frac{\text{adj}}{\text{hyp}}$

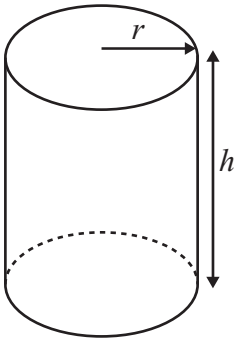
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

Volume of prism = area of cross section × length



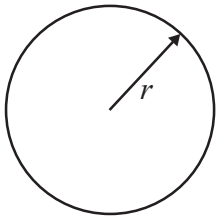
Circumference of circle = $2\pi r$

Area of circle = πr^2



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

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



Answer ALL TWENTY ONE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 The table shows the numbers of performances of six musicals on Broadway, New York.

Musical	Number of performances
A Chorus Line	6137
Miss Saigon	4092
42nd Street	3486
Cats	7485
Les Misérables	6680
Grease	3388

(a) Write the number 6137 in words.

.....

(1)

(b) Which number in the table is the largest number?

.....

(1)

(c) Write down the value of the 9 in the number 4092

.....

(1)

(d) Which number in the table is a multiple of 10?

.....

(1)

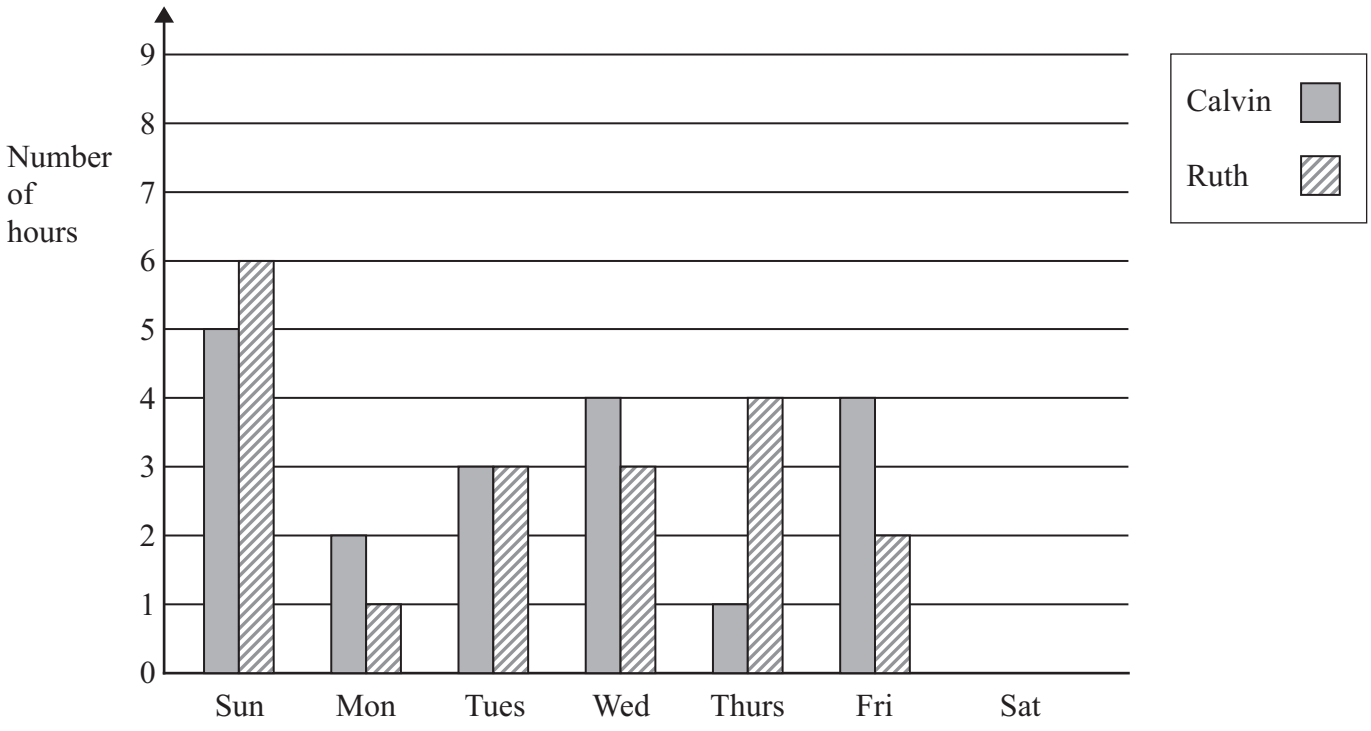
(e) The number of performances of one musical, when written correct to the nearest hundred, is 3400
Write down the musical.

.....

(1)

(Total for Question 1 is 5 marks)

2 The bar chart shows information about the numbers of hours Calvin and Ruth each watched TV on six days last week.



On one day last week Calvin and Ruth watched TV for the same number of hours.

(a) Which day?

.....

(1)

(b) Write down the number of hours that Ruth watched TV on Thursday.

..... hours

(1)

On Saturday, Calvin watched 8 hours of TV and Ruth watched 6 hours of TV.

(c) (i) Show this information on the bar chart.

(ii) Express the ratio 8 : 6 in its simplest form.

.....

(2)

On Saturday, Calvin watched sport for 25% of the 8 hours he watched TV.

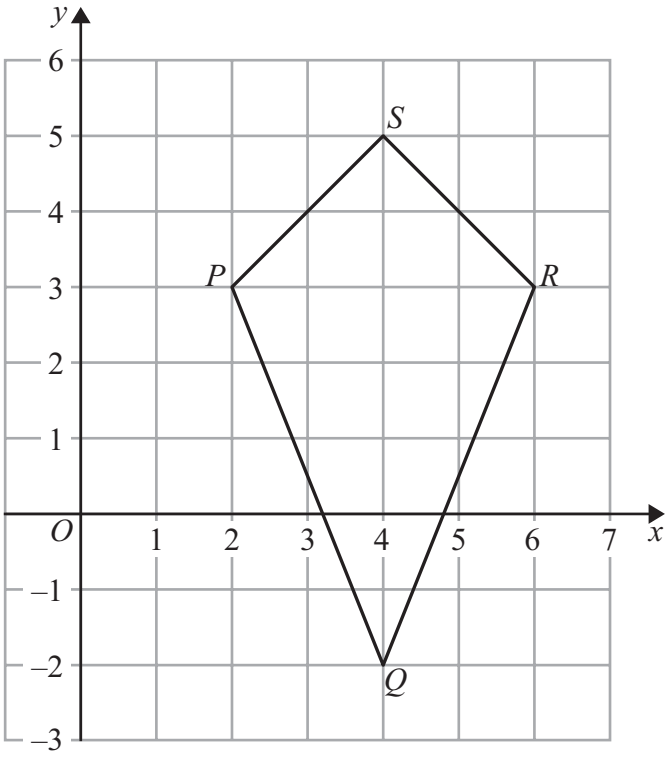
(d) Work out 25% of 8

.....

(2)

(Total for Question 2 is 6 marks)

3 The diagram shows a quadrilateral *PQRS* drawn on a centimetre grid.



(a) Write down the mathematical name of the quadrilateral *PQRS*.

.....

(1)

(b) Measure the length of *PQ*.
Give your answer in millimetres.

..... mm

(1)

(c) Write down the coordinates of

(i) the point *P*,

(..... , ...)

(ii) the point *Q*.

(..... , ...)

(2)

(d) On the quadrilateral *PQRS*, draw the line of symmetry.

(1)

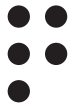
(e) Work out the area of the quadrilateral *PQRS*.

..... cm^2

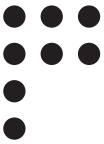
(2)

(Total for Question 3 is 7 marks)

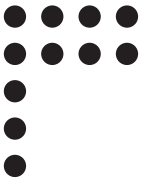
4 Here is a sequence of patterns made from dots.



Pattern number 1



Pattern number 2



Pattern number 3

(a) In the space below, draw Pattern number 4

(1)

This rule can be used to find the number of dots in a pattern of the sequence.

Multiply the Pattern number by 3 and then add 2

(b) Work out the number of dots in Pattern number 7

.....

(2)

A pattern has exactly 41 dots.

(c) Work out the Pattern number.

.....

(2)

T is the number of dots in Pattern number n.

(d) Write down a formula for T in terms of n.

.....

(3)

(Total for Question 4 is 8 marks)

5 The diagram shows a solid cuboid.

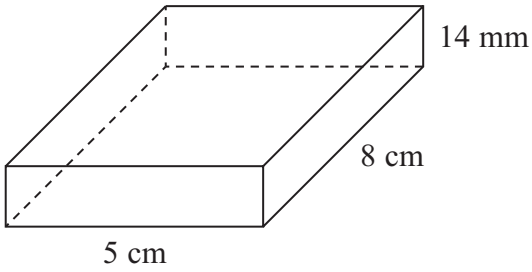


Diagram **NOT** accurately drawn

(a) How many faces has this cuboid?

.....

(1)

(b) How many edges has this cuboid?

.....

(1)

The cuboid has width 5 cm, length 8 cm and height 14 mm.

(c) Work out the volume, in cm^3, of the cuboid.

..... cm^3

(3)

(Total for Question 5 is 5 marks)

6 Simon wants to buy a computer.
He can choose to pay the cash price of £520 or pay by using the credit option.

Credit Option
First pay £100 and then 6 monthly payments of £78.24

Work out the difference in cost between the cash price and the credit option.

£.....

(Total for Question 6 is 3 marks)

7 The table shows the maximum and minimum temperatures recorded in 5 cities during one year.

City	Maximum temperature (°C)	Minimum temperature (°C)
Paris	32	– 4
Sydney	38	8
Ottawa	21	– 17
Helsinki	22	– 16
New York	34	– 12

(a) In which city was the lowest temperature recorded?

.....

(1)

(b) Work out the difference between the maximum temperature and the minimum temperature recorded in New York.

..... °C

(2)

In the same year, the minimum temperature recorded in Oslo was 7 °C lower than the minimum temperature recorded in Helsinki.

(c) Work out the minimum temperature recorded in Oslo that year.

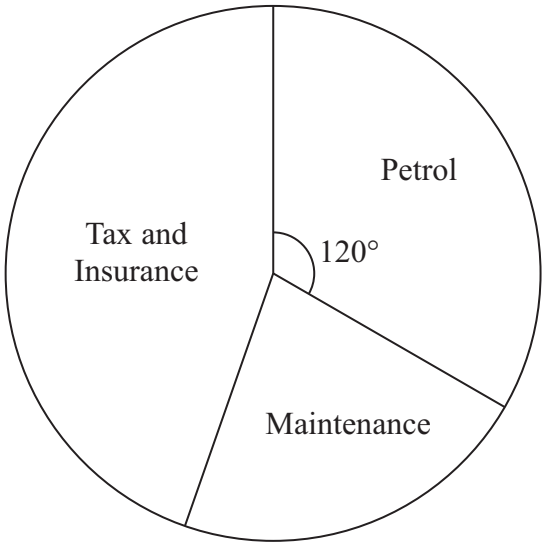
..... °C

(2)

(Total for Question 7 is 5 marks)

8 (a) The pie chart shows information about the amounts Mrs Gupta spent in one year to run her car.

She spent a total of £1800



Work out how much Mrs Gupta spent on petrol for her car in the year.

£.....

(2)

(b) The table shows the cost of the electricity, used by the Gupta family, for each 3-month period in one year.

Months	Cost of electricity (£)
January – March	300
April – June	140
July – September	100
October – December	260
Total	800

Rohit Gupta must draw a pie chart for this information for his maths homework.

Work out the angle in the pie chart for the 3-month period from July to September.

..... °

(2)

(Total for Question 8 is 4 marks)

9 *CDF* and *DEF* are isosceles triangles.
CD = *DF* = *EF*.
ACDE and *BCF* are straight lines.

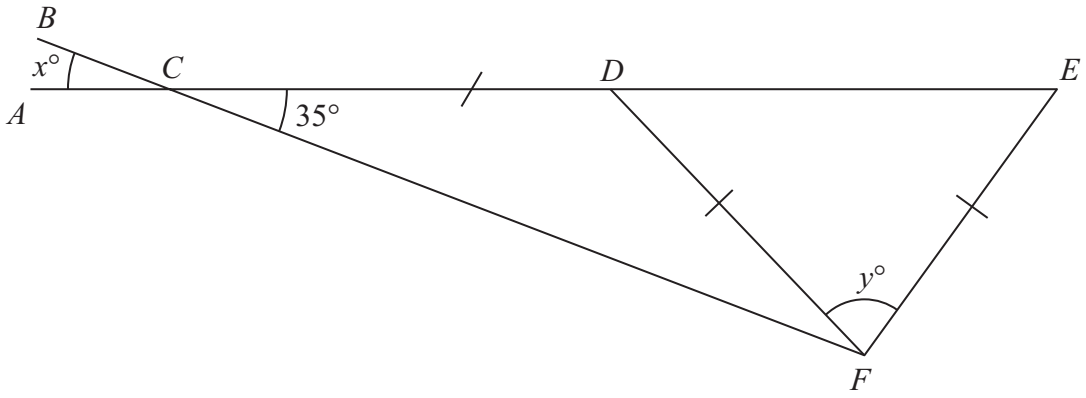


Diagram **NOT** accurately drawn

(a) (i) Find the value of *x*.

x = ...

(ii) Give a reason for your answer.

.....

.....

.....

(2)

(b) Calculate the value of *y*.

y = ...

(3)

(Total for Question 9 is 5 marks)

10 (a) Write these fractions in order of size.
Start with the smallest fraction.

$$\frac{7}{8} \qquad \frac{3}{4} \qquad \frac{11}{12} \qquad \frac{13}{16}$$

.....

(2)

(b) Show that $\frac{2}{5} \div \frac{6}{7} = \frac{7}{15}$

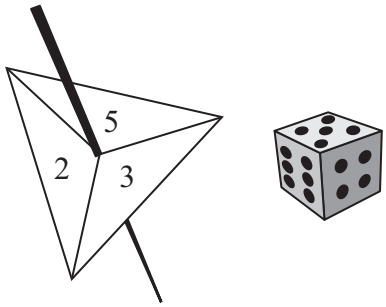
(2)

(c) Show that $\frac{2}{5} - \frac{1}{6} = \frac{7}{30}$

(2)

(Total for Question 10 is 6 marks)

11 Paul has a fair 3-sided spinner and a fair 6-sided dice.
The spinner can land on 2, 3 or 5



Paul spins the spinner once and throws the dice once.

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

Dice

		1	**2**	**3**	**4**	**5**	**6**
Spinner	**2**	2,1					2,6
	3			3,3	3,4		
	5						

(2)

Paul spins the spinner once and throws the dice once.

(b) Find the probability that the number the spinner lands on is greater than the number shown on the dice.

.....

(2)

(Total for Question 11 is 4 marks)

12

1 United States dollar = 98 Japanese yen
1 United States dollar = 60 Indian rupees

(a) Change 85 United States dollars into Japanese yen.

..... Japanese yen

(2)

(b) Change 784 Japanese yen into Indian rupees.

..... Indian rupees

(2)

(Total for Question 12 is 4 marks)

13 (a) Simplify

(i) $t^3 + t^3 + t^3 + t^3$

.....

(ii) $10x - 4y - 2x - y$

.....

(iii) $e \times e \times 7$

.....

(4)

(b) Factorise $g^2 + 4g$

.....

(2)

(Total for Question 13 is 6 marks)

14 The table shows information about the numbers of fish caught by 40 people in one day.

Number of fish	Frequency
0	2
1	12
2	15
3	8
5	2
8	1

Work out the mean number of fish caught.

.....

(Total for Question 14 is 3 marks)

15 Each exterior angle of a regular polygon is 15°

(a) How many sides has the regular polygon?

.....

(2)

The diagram shows 3 identical regular pentagons.

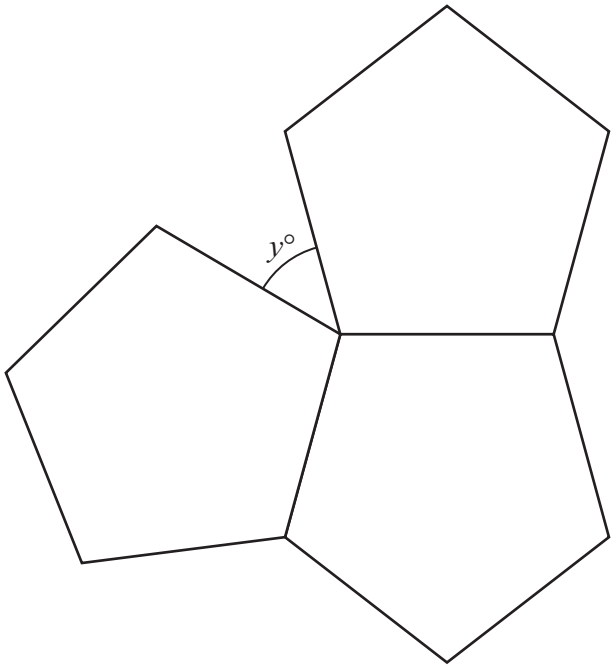


Diagram **NOT** accurately drawn

(b) Work out the value of y.

$y =$.....

(3)

(Total for Question 15 is 5 marks)

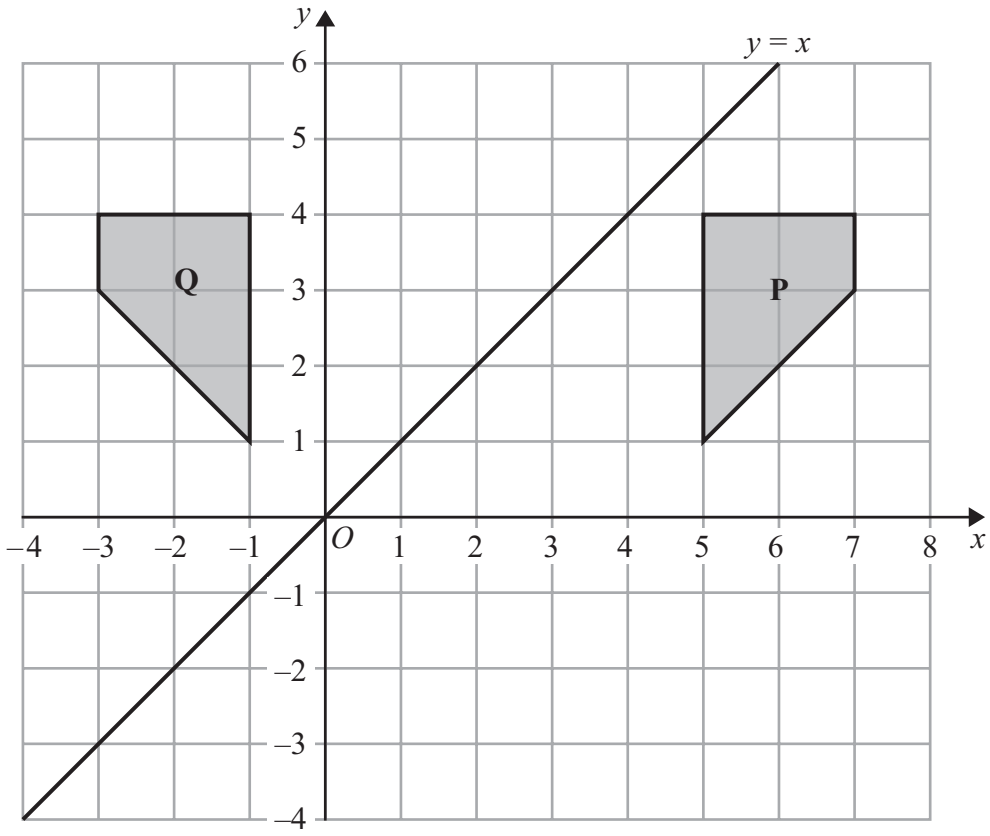
16 Use your calculator to work out the value of

$$\frac{12.5 \times 4.5}{6.8 + \sqrt{67.24}}$$

.....

(Total for Question 16 is 2 marks)

17



(a) Describe fully the single transformation which maps shape **P** onto shape **Q**.

.....

.....

(2)

(b) Reflect the shape **Q** in the line $y = x$
Label the new shape **R**.

(2)

(Total for Question 17 is 4 marks)

18 The mean height of a group of 6 children is 165 cm.
One child, whose height is 155 cm, leaves the group.

Find the mean height of the remaining 5 children.

..... cm

(Total for Question 18 is 3 marks)

19

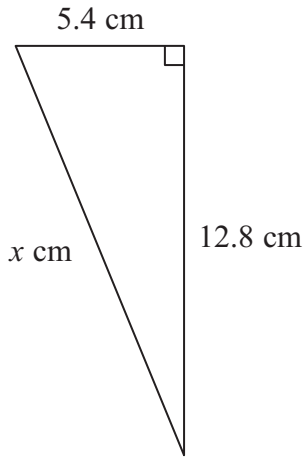


Diagram **NOT** accurately drawn

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

x =.....

(Total for Question 19 is 3 marks)

20 (a) $A = 2^2 \times 3 \times 5^2$

$B = 2^3 \times 5$

(i) Find a common factor of A and B.

.....

(ii) Find a common multiple of A and B.

.....

(3)

(b) $\dfrac{8^2 \times 8^3}{8^4} = 2^n$

Find the value of n.

$n =$.....

(2)

(Total for Question 20 is 5 marks)

21 The diagram shows a right-angled triangle and a rectangle.

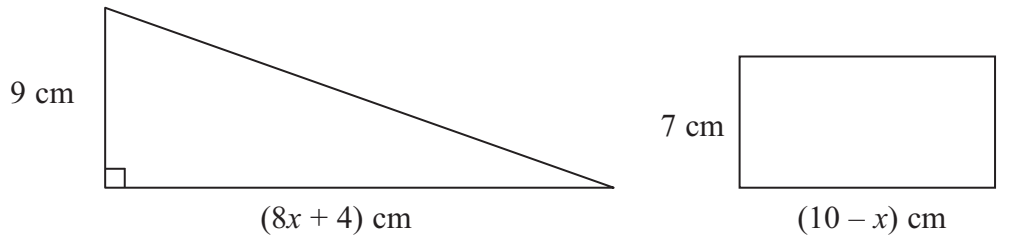


Diagram **NOT** accurately drawn

The area of the triangle is twice the area of the rectangle.

(i) Write down an equation for x.

.....

(ii) Find the area of the rectangle.
Show clear algebraic working.

..... cm^2

(Total for Question 21 is 7 marks)

TOTAL FOR PAPER IS 100 MARKS

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