Write your name here

Surname	Other names

Pearson Edexcel International GCSE

Centre Number | Candidate Number

Mathematics A

Paper 1FR

Foundation Tier

Monday 8 January 2018 – 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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1/1/1/

P 5 3 2 9 6 A 0 1 2 8

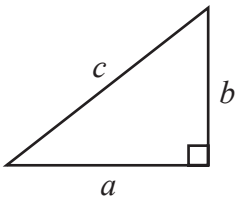
Pearson

International GCSE MATHEMATICS

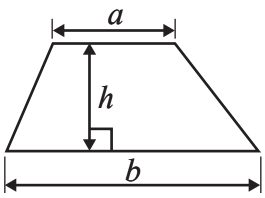
FORMULAE SHEET – FOUNDATION TIER

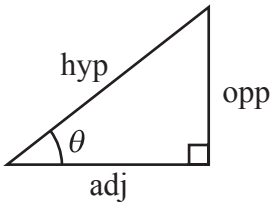
Pythagoras' Theorem

$a^2 + b^2 = c^2$



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





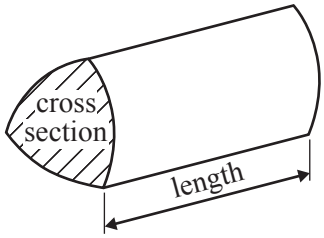
adj = hyp × cos θ
opp = hyp × sin θ
opp = adj × tan θ

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

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

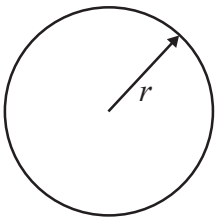
$\tan\theta = \frac{\text{opp}}{\text{adj}}$

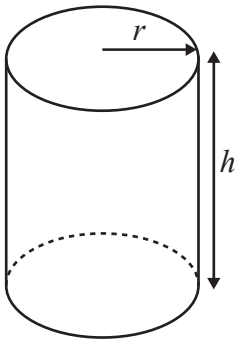
Volume of prism = area of cross section × length



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 FIVE questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 (a) Write the number **eight thousand and twenty four** in figures.

.....

(1)

Here are some numbers.

38 5043 623 540

(b) Write these numbers in order of size.
Start with the smallest number.

.....

(1)

There were 76 385 spectators at the 2015 football Asian Cup Final.

(c) (i) Write down the value of the 3 in the number 76 385

.....

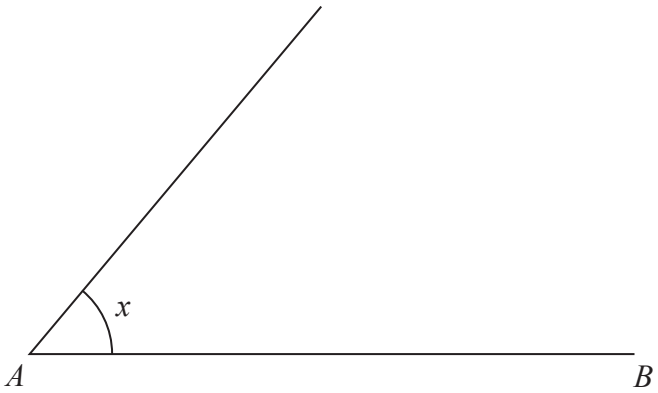
(ii) Write the number 76 385 correct to the nearest 1000

.....

(2)

(Total for Question 1 is 4 marks)

2



(a) Measure the length of the line AB.

State the units of your answer.

....

(2)

(b) (i) What type of angle is the angle marked x?

.....

(ii) Measure the size of the angle marked x.

.....°

(2)

(Total for Question 2 is 4 marks)

3 There were 28 men at a tennis match.
The number of women at the tennis match was 3 times the number of men.
The number of children at the tennis match was half the number of men.

Work out the total number of people at the tennis match.

.....

(Total for Question 3 is 3 marks)

4 Here are the first four terms of a number sequence.

3 7 11 15

(a) Write down the next term of the sequence.

.....

(1)

(b) Write down the 10th term of the sequence.

.....

(1)

Ali says that 102 is a term of the sequence.

Ali is wrong.

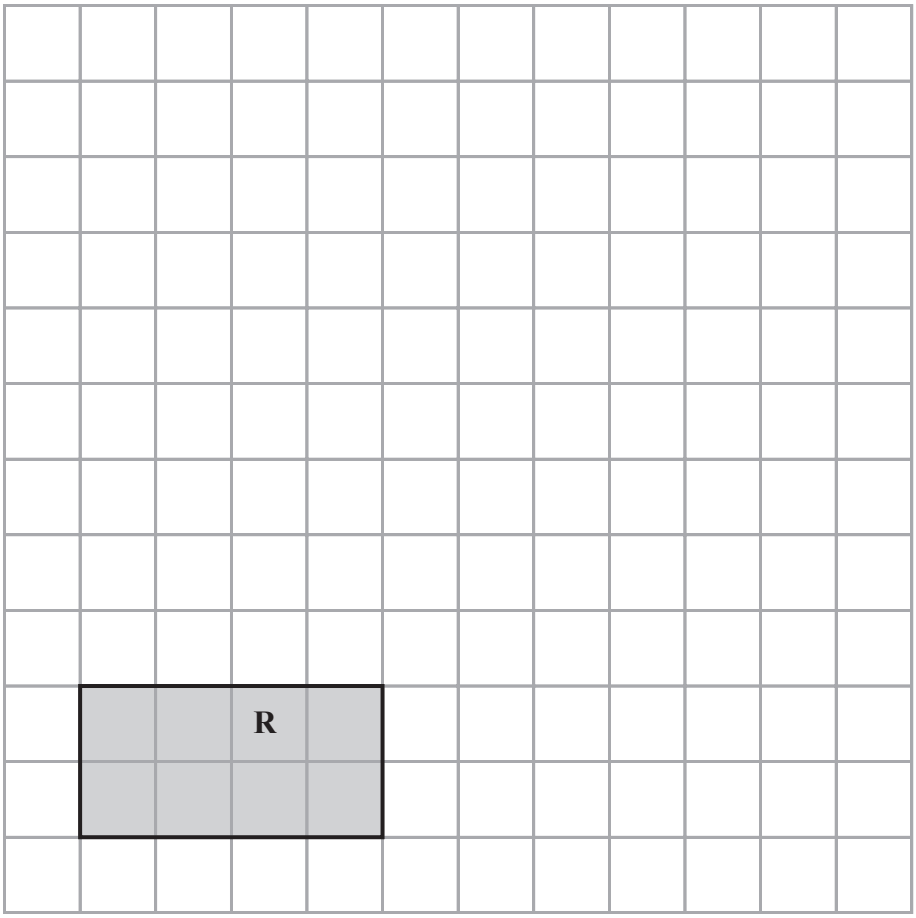
(c) Explain why.

.....

(1)

(Total for Question 4 is 3 marks)

5 Rectangle **R** is drawn on a centimetre grid.



(a) Find the perimeter of rectangle **R**.

.....cm

(1)

A square **S** has an area twice the area of rectangle **R**.

(b) On the grid, draw square **S**.

(2)

(Total for Question 5 is 3 marks)

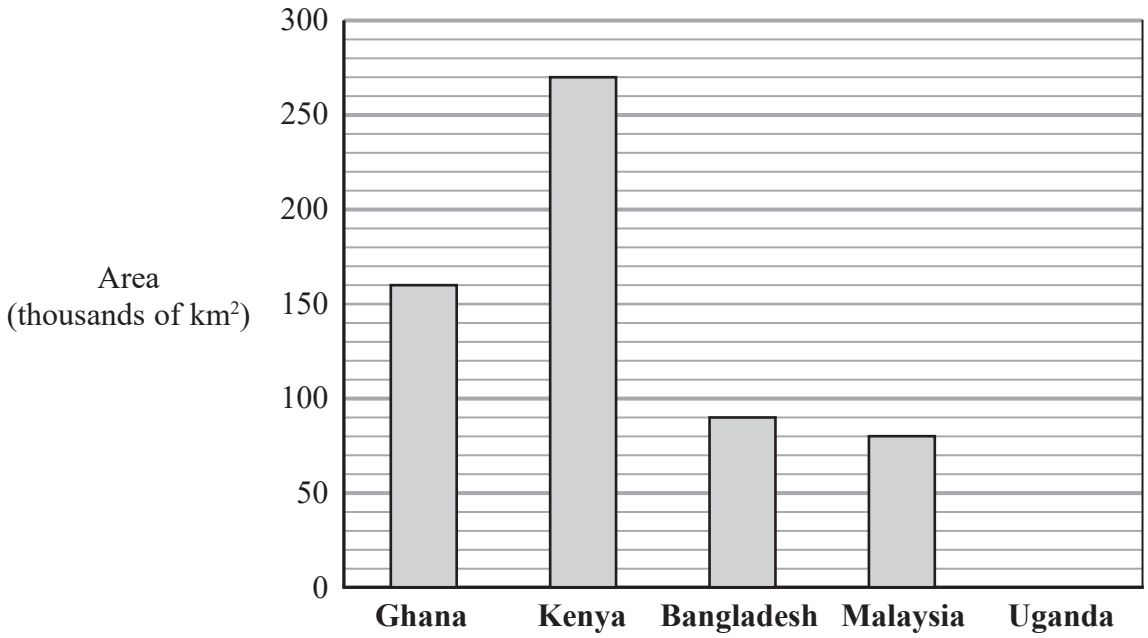
6 The lowest temperature ever recorded in Saudi Arabia is −11°C.
The highest temperature ever recorded in Saudi Arabia is 51°C.

Work out the difference between these two temperatures.

.....°C

(Total for Question 6 is 2 marks)

7 The bar chart shows information about the area of land used for farming in each of four countries in 2012



(a) Write down the area of land used for farming in Ghana in 2012

.....thousands of km²

(1)

The area of land used for farming in Kenya in 2012 was greater than the area of land used for farming in Malaysia in 2012

(b) How much greater?

.....thousands of km²

(2)

The area of land used for farming in Uganda in 2012 was 140 thousands of km²

(c) Draw a bar on the bar chart to show this information.

(1)

Coffee is grown on 7% of the land used for farming in Uganda.

(d) Work out 7% of 140 000

.....

(2)

(Total for Question 7 is 6 marks)

8 (a) Write these numbers in order of size.
Start with the smallest number.

$\frac{3}{8}$ 38% 0.146 $\frac{1}{3}$

.....

(2)

Two factors of 24 have a sum of 18

(b) Find these two factors.

..... and .....

(2)

(Total for Question 8 is 4 marks)

9 Here are the lengths, in mm, of 10 snails a scientist found in a forest.

18 22 31 31 41 26 27 47 34 23

(a) (i) Work out the median length.

.....mm

(2)

(ii) What percentage of the 10 snails have a length greater than the median length?

.....%

(1)

(b) Work out the mean length.

.....mm

(2)

The scientist finds a snail in a field.
This snail has a length that is longer than any of the 10 snails he found in the forest.

The lengths of the 11 snails have a range of 32 mm.

(c) Work out the length of the snail the scientist finds in the field.

.....mm

(2)

(Total for Question 9 is 7 marks)

10 Jim puts 4 white tiles and 3 grey tiles into a bag.
Each tile has a letter on it.

Jim takes at random a tile from the bag.

(a) Write down the letter that Jim is most likely to take.

.....

(1)

(b) Write down the probability that the tile is grey with the letter **C** on it.

.....

(1)

(c) Write down the probability that the tile does not have the letter **A** on it.

.....

(1)

Jim puts the tile back into the bag.
He then puts more grey tiles into the bag.
Each of these tiles has the letter **C** on it.

Alice takes at random a tile from the bag.

The probability that this tile has the letter **C** on it is $\frac{1}{2}$

(d) Work out the probability that the tile Alice takes is grey with the letter **C** on it.

.....

(2)

(Total for Question 10 is 5 marks)

11 (a) Solve $\frac{x}{2} = 8$

$x =$ .....

(1)

(b) Solve $8 - y = 5$

$y =$ .....

(1)

(c) Solve $2t + 2t = 18$

$t =$ .....

(2)

(Total for Question 11 is 4 marks)

12

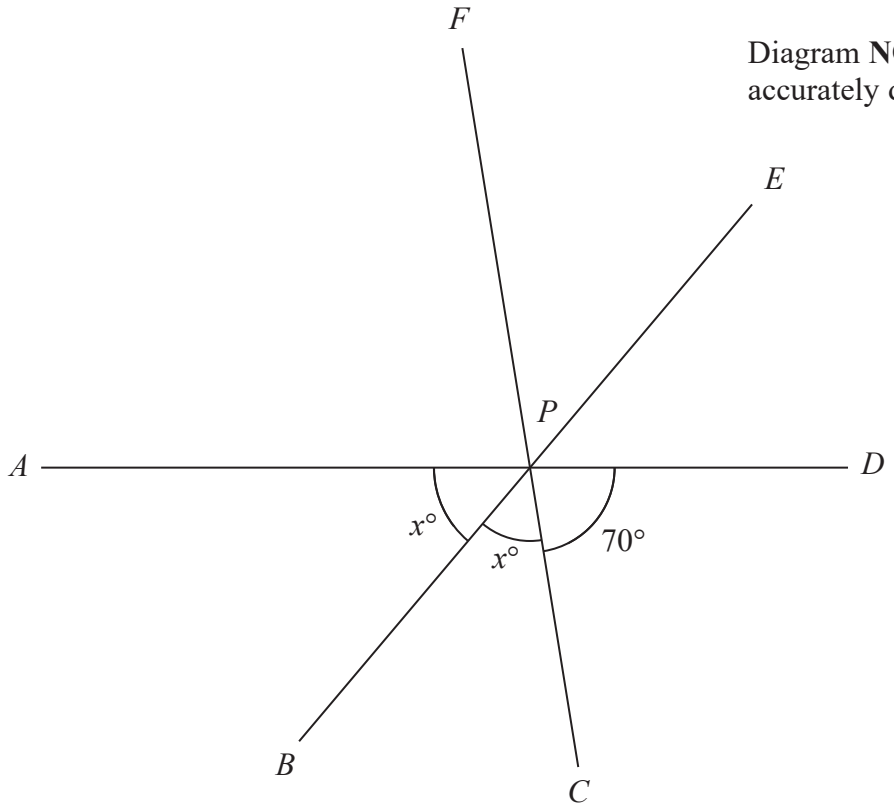


Diagram **NOT** accurately drawn

APD, *BPE* and *CPF* are straight lines.

Angle *CPD* = 70°
Angle *APB* = angle *BPC* = *x*°

(a) Find the size of angle *FPA*.

.....°

(1)

(b) Work out the value of *x*.

.....

(2)

(Total for Question 12 is 3 marks)

13 $y = 2w$

(a) Work out the value of y when $w = 30$

$y =$ .....

(1)

$t = 2c + 3d$
$c = 8$
$d = 5$

(b) Work out the value of t.

$t =$ .....

(2)

Here is a straight line $ABCD$.

Diagram **NOT** accurately drawn

$AB = x$ cm
$BC = 2AB$
CD is 5 cm longer than AB

The total length of the line $ABCD$ is L cm.

(c) Find an expression for L in terms of x.
Give your answer in its simplest form.

$L =$ .....

(3)

(Total for Question 13 is 6 marks)

14 In Jordan, the total cost of 2.5 kg of potatoes and 3 kg of onions is 3.55 dinars.

The cost of $\frac{1}{2}$ kg of onions is 0.30 dinars.

Work out the cost, in Jordan, of 1 kg of potatoes.

.....dinars

(Total for Question 14 is 4 marks)

15 $ABCD$ is a parallelogram.

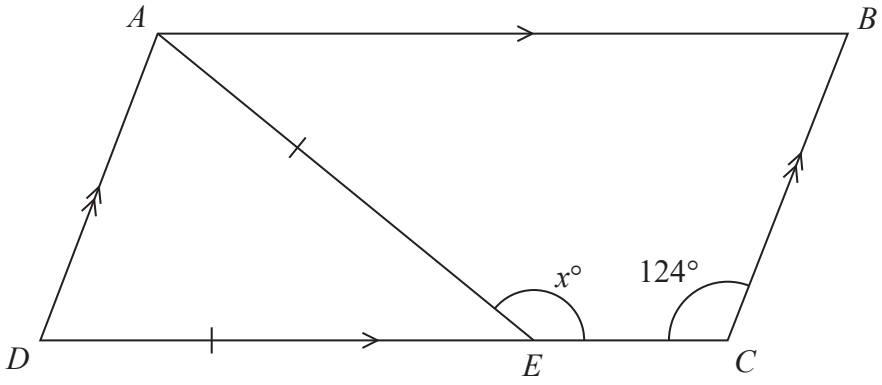


Diagram **NOT** accurately drawn

Angle $DCB = 124°$
E is the point on DC such that $AE = DE$.
Angle $AEC = x°$

Work out the value of x.

.....

(Total for Question 15 is 4 marks)

16 Faisal lives in the USA.
He wants to buy one cotton sheet.

In the USA one sheet costs 79 US dollars.

Faisal knows that the same type of sheet costs 210 Egyptian pounds when bought in Egypt.

He also knows these exchange rates.

1 euro = 1.10 US dollars
1 euro = 9.72 Egyptian pounds

How much cheaper is the cost of one sheet when bought in Egypt than when bought in the USA?

Give your answer in US dollars correct to the nearest dollar.

.....US dollars

(Total for Question 16 is 4 marks)

17 (a) Expand and simplify

$$5(x + y) - 3x + 3y$$

.....

(2)

(b) Simplify $t^3 \times t^7$

.....

(1)

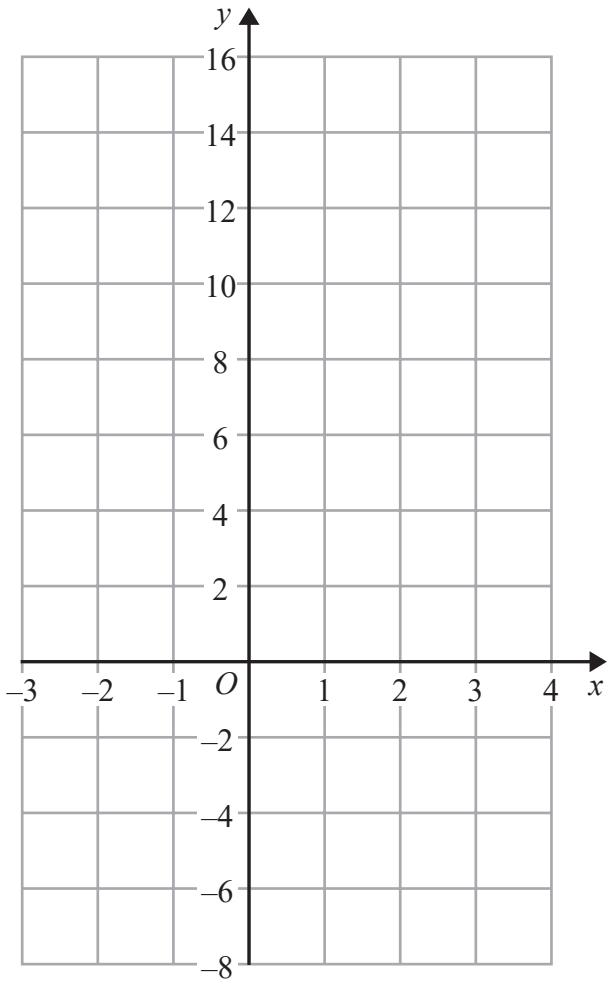
(c) Simplify $(m^4)^3$

.....

(1)

(Total for Question 17 is 4 marks)

18 (a) On the grid, draw the graph of $y = 4x + 2$ for values of x from -2 to 3



(3)

The point with coordinates $(p, 50)$ lies on the line with equation $y = 4x + 2$

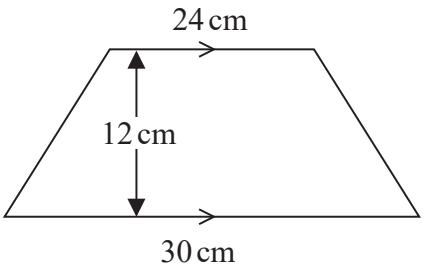
(b) Work out the value of p.

$p =$ .....

(2)

(Total for Question 18 is 5 marks)

19 Here is a trapezium and a square.



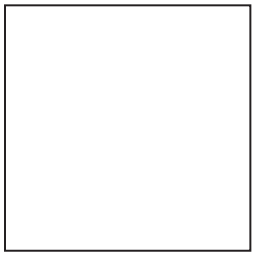


Diagram **NOT** accurately drawn

The lengths of the parallel sides of the trapezium are 24 cm and 30 cm.
The height of the trapezium is 12 cm.

The area of the square is equal to the area of the trapezium.

Work out the perimeter of the square.

.....cm

(Total for Question 19 is 4 marks)

20 Here is a field in the shape of a circle.

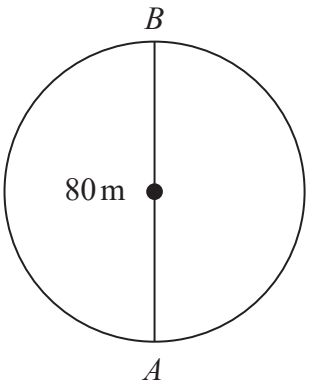


Diagram **NOT** accurately drawn

The field is crossed by a path AB where AB is a diameter of the circle.
$AB = 80$ metres.

Anil runs once around the circumference of the circle.
Sachin runs along the path from A to B and then runs back along the path to A.

Anil runs further than Sachin.

How much further?
Give your answer in metres, correct to 1 decimal place.

.....m

(Total for Question 20 is 3 marks)

21 Ahmed bought one box of lemons.
The box of lemons cost $4
There were 24 lemons in the box.

Ahmed sold $\frac{3}{4}$ of all the lemons he bought for 30 cents each.

He then sold the rest of the lemons for 20 cents each.

Calculate the percentage profit that Ahmed made.

Use $1 = 100 cents.

.....%

(Total for Question 21 is 4 marks)

22 The scale of a map is 1:50 000

The length of a road on the map is 30 cm.

Work out the length of the real road.
Give your answer in km.

.....km

(Total for Question 22 is 3 marks)

23 There are 320 students at a school.

$\frac{5}{8}$ of these students are girls.

$\frac{3}{4}$ of the girls have blue eyes.

$\frac{2}{3}$ of the boys have blue eyes.

What fraction of the students at the school have blue eyes?

.....

(Total for Question 23 is 4 marks)

24 $\mathscr{E} = \{2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13\}$

$A = \{2, 4, 6, 8, 10, 12\}$
$B = \{3, 6, 9, 12\}$

(a) List the members of the set $A \cup B$

.....

(1)

C is a set with 4 members.

$A \cap C = \varnothing$ and $B \cap C = \varnothing$

(b) List the members of set C

.....

(2)

(Total for Question 24 is 3 marks)

25 Here is a right-angled triangle ABC.

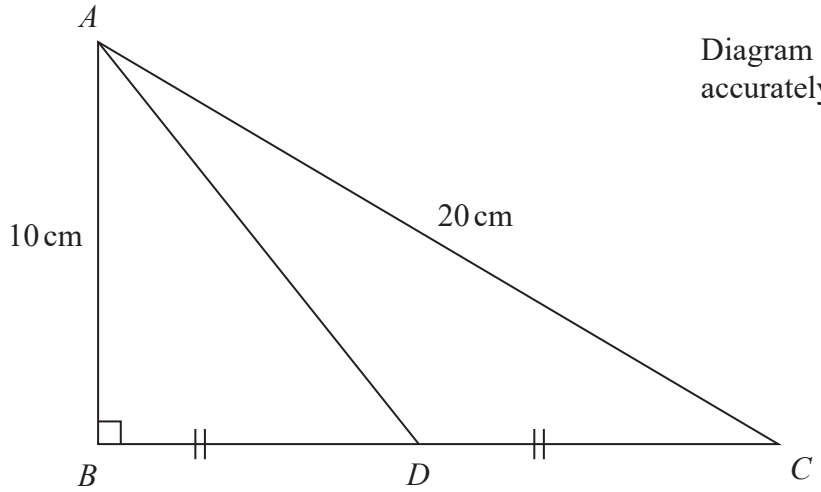


Diagram **NOT** accurately drawn

Angle $ABC = 90°$
$AC = 20$ cm
$AB = 10$ cm

D is the midpoint of BC.

Work out the length of AD.
Give your answer correct to 1 decimal place.

.....cm

(Total for Question 25 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS

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