Bishops Online Tutoring

Education Consultancy

Edexcel GCSE Mathematics
PYTHAGORAS THEOREM

Materials Required:

- Pen
- HB Pencil
- Ruler (in centimetres and millimetres)
- Protractor
- Compass

Instructions:

- Use a black ink pen to answer all questions
- Fill your name in the section below
- Answer the questions in the spaces provided
- Show your working out for all answers

Information:

- The marks allocated for each question are displayed within brackets – utilise this information to gauge the appropriate amount of time to dedicate to each question
- Questions marked with an asterisk (*) will assess your written communication; be careful of spelling, punctuation and grammar with these questions

Advice:

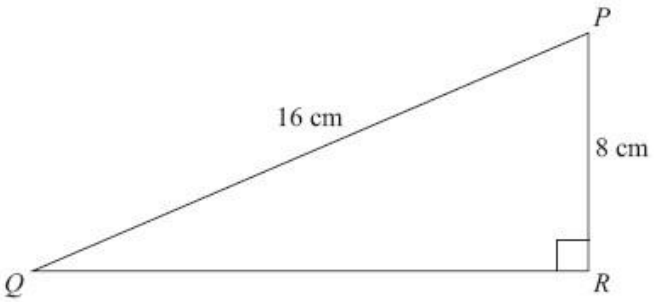
- Carefully read the question before attempting to answer it
- Be vary of time and try to answer every question
- If you have enough time in the end, go back and check your answers. A good way to check your answers is to retry the question with the hope of getting the same answer as before without looking at your working out from before

CALCULATOR ALLOWED

NAME:	

1.

Diagram **NOT** accurately drawn



PQR is a right-angled triangle.
PQ = 16 cm.
PR = 8 cm.

Calculate the length of *QR*.
Give your answer correct to 2 decimal places.

$16^2 - 8^2 = 192$

13.86 ..... cm

(3 marks)

2.

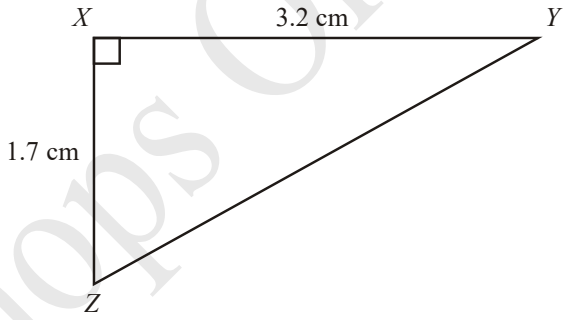


Diagram **NOT** accurately drawn

XYZ is a right-angled triangle.
XY = 3.2 cm.
XZ = 1.7 cm.

Calculate the length of *YZ*.

Give your answer correct to 3 significant figures

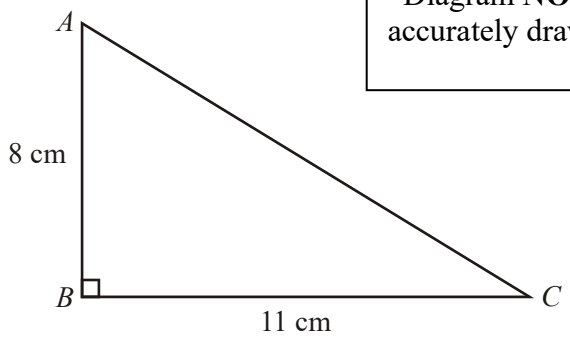
$3.2^2 + 1.1^2 = 13.13$

3.62 ..... cm

(3 marks)

3.

Diagram **NOT** accurately drawn



ABC is a right-angled triangle.

AB = 8 cm,
BC = 11 cm.

Calculate the length of *AC*.
Give your answer correct to 3 significant figures.

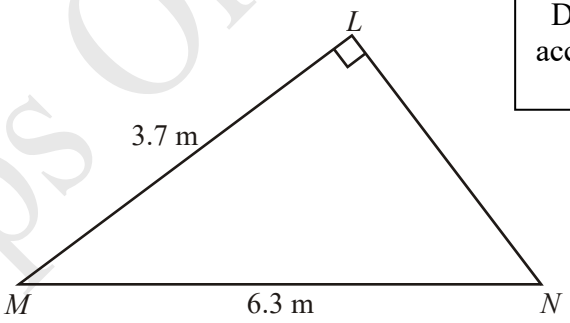
$8^2 + 11^2 = 185$

13.6 ..... cm

(3 marks)

4.

Diagram **NOT** accurately drawn



Angle *MLN* = 90°.

LM = 3.7 m.
MN = 6.3 m.

Work out the length of *LN*.
Give your answer correct to 3 significant figures.

$6.3^2 - 3.1^2 = 26$

LN = 5.10 ..... m

(3 marks)

5.

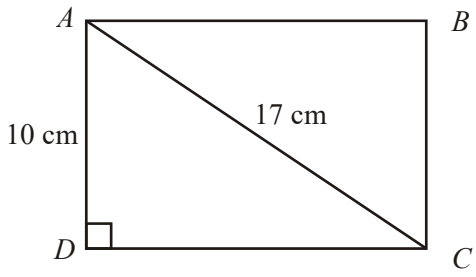


Diagram **NOT** accurately drawn

ABCD is a rectangle.
AC = 17 cm.
AD = 10 cm.

Calculate the length of the side *CD*.
Give your answer correct to one decimal place.

$17^2 - 10^2 = 189$

13.7 ..... cm

(3 marks)

6.

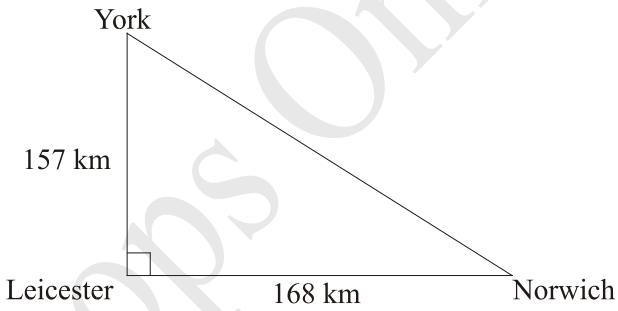


Diagram **NOT** accurately drawn

The diagram shows three cities.
Norwich is 168 km due East of Leicester.
York is 157 km due North of Leicester.

Calculate the distance between Norwich and York.
Give your answer correct to the nearest kilometre.

$157^2 + 168^2 = 52873$

230 ..... km

(3 marks)

7.

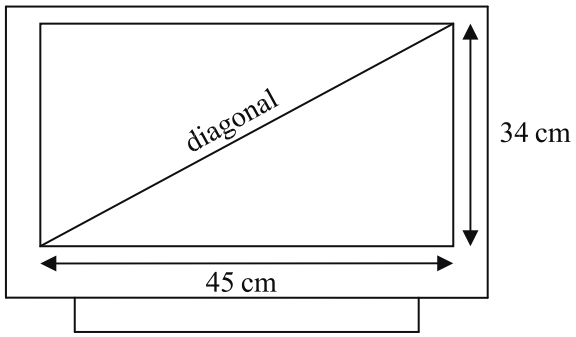


Diagram **NOT** accurately drawn

A rectangular television screen has a width of 45 cm and a height of 34 cm.

Work out the length of the diagonal of the screen.
Give your answer correct to the nearest centimetre.

$45^2 + 34^2 = 3181$

56 ..... cm

(4 marks)

8.

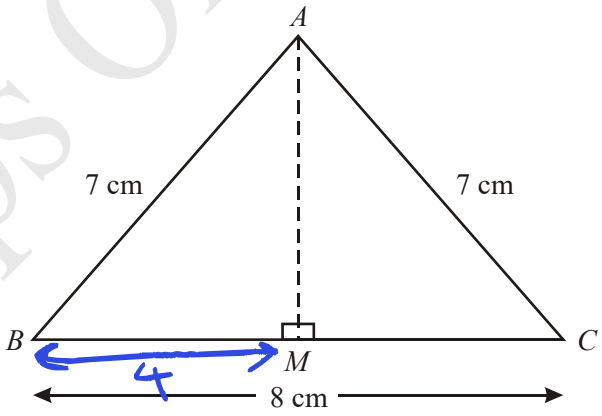


Diagram **NOT** accurately drawn

Work out the length, in centimetres, of *AM*.
Give your answer correct to 2 decimal places.

$7^2 - 4^2 = 33$

5.74 ..... cm

(3 marks)

9.

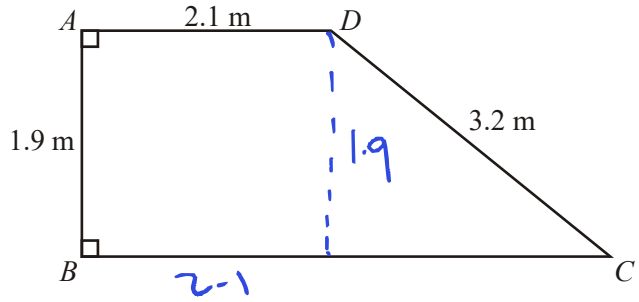


Diagram **NOT** accurately drawn

ABCD is a trapezium.
AD is parallel to *BC*.
Angle *A* = angle *B* = 90.
AD = 2.1 m, *AB* = 1.9 m, *CD* = 3.2 m.

Work out the length of *BC*.
Give your answer correct to 3 significant figures.

$3.2^2 - 1.9^2 = 6.63$
$\sqrt{6.63} = 2.57$
$2.57 + 2.1 =$

4.67 ..... m

(4 marks)

10.

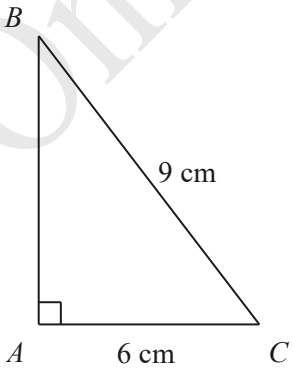


Diagram **NOT** accurately drawn

ABC is a right-angled triangle.

$9^2 - 6^2 = 45$

AC = 6 cm.
BC = 9 cm.

Work out the length of *AB*.
Give your answer correct to 3 significant figures.

6.71 ..... cm

(3 marks)

11.

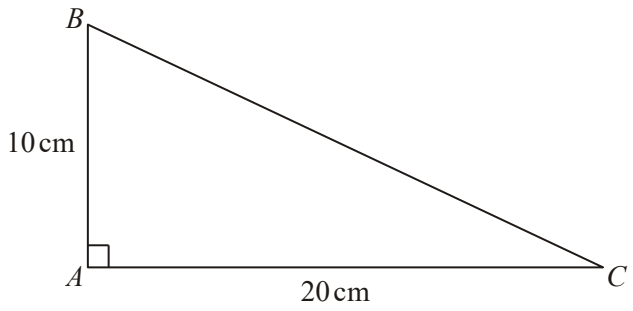


Diagram **NOT** accurately drawn

In triangle *ABC*,

AB = 10 cm
AC = 20 cm
angle *BAC* = 90°

Work out the length of *BC*.
Give your answer correct to 3 significant figures.
You must state the units in your answer.

$20^2 + 10^2 = 500$

22.4 cm

(3 marks)

12.

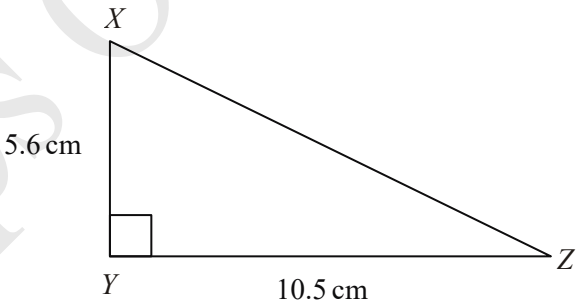


Diagram **NOT** accurately drawn

In the triangle *XYZ*

$10.5^2 + 5.6^2 = 141.61$

XY = 5.6 cm
YZ = 10.5 cm
angle *XYZ* = 90

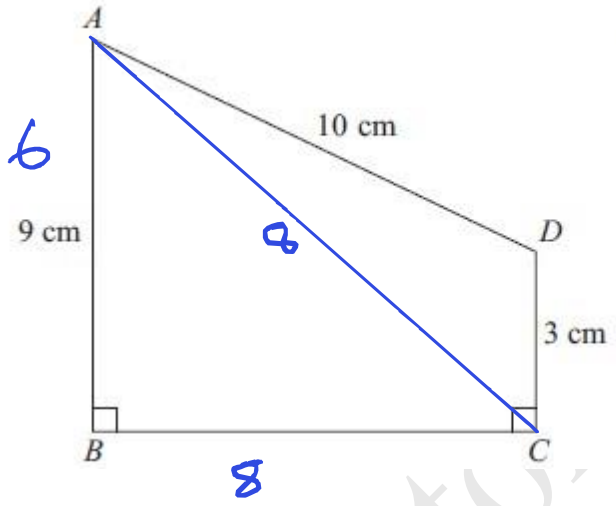
Work out the length of *XZ*.

11.9 cm

(3 marks)

13. *ABCD* is a trapezium.

Diagram **NOT** accurately drawn



$AD = 10$ cm
$AB = 9$ cm
$DC = 3$ cm
Angle ABC = angle $BCD = 90°$

Calculate the length of AC.
Give your answer correct to 3 significant figures.

$10^2 - 6^2 = 64$
$AC^2 = 8^2 + 9^2 = 145$

12.0 ..... cm

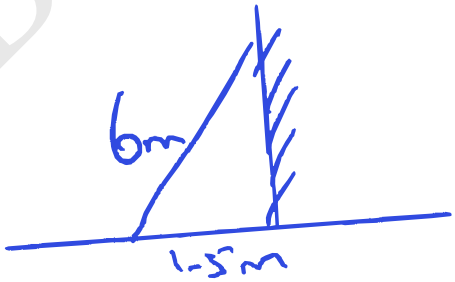
(5 marks)

14. A ladder is 6 m long.
The ladder is placed on horizontal ground, resting against a vertical wall.

The instructions for using the ladder say that the bottom of the ladder must **not** be closer than 1.5 m from the bottom of the wall.

How far up the wall can the ladder reach?
Give your answer correct to 1 decimal place.

$6^2 - 1.5^2 = 33.75$
$\sqrt{33.75} = 5.8$



5.8 ..... m

(4 marks)