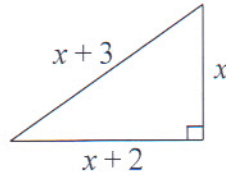


Nov 05 4H

11. A right-angled triangle has sides of length x cm, $(x + 2)$ cm and $(x + 3)$ cm.



(a) Use Pythagoras' theorem to write down an equation in x .

..... (1)

(b) Show that your equation simplifies to $x^2 - 2x - 5 = 0$

(2)

(c) By solving the equation $x^2 - 2x - 5 = 0$, find the length of each side of the triangle. Give your answers correct to one decimal place.

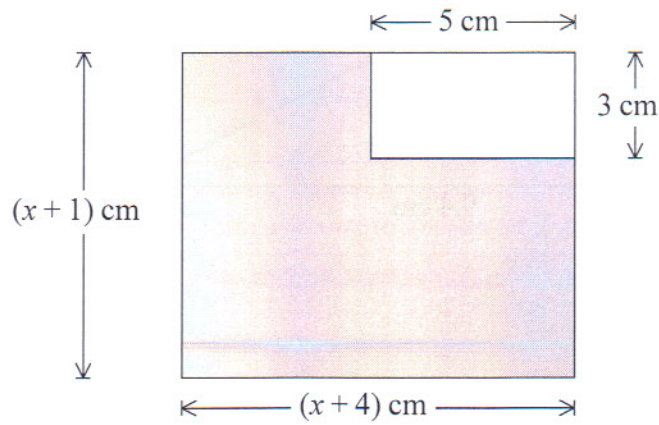
..... cm, cm, cm (3)

(Total 6 marks)

Q11



17.



May 05 3H

Diagram **NOT** accurately drawn

A rectangular piece of card has length $(x + 4)$ cm and width $(x + 1)$ cm. A rectangle 5 cm by 3 cm is cut from the corner of the piece of card. The remaining piece of card, shown shaded in the diagram, has an area of 35 cm^2 .

(a) Show that $x^2 + 5x - 46 = 0$

(3)

(b) Solve $x^2 + 5x - 46 = 0$ to find the value of x . Give your answer correct to 3 significant figures.

$x = \dots\dots\dots$

(3)

(Total 6 marks)

Q17



20.

NOV 08 34 .

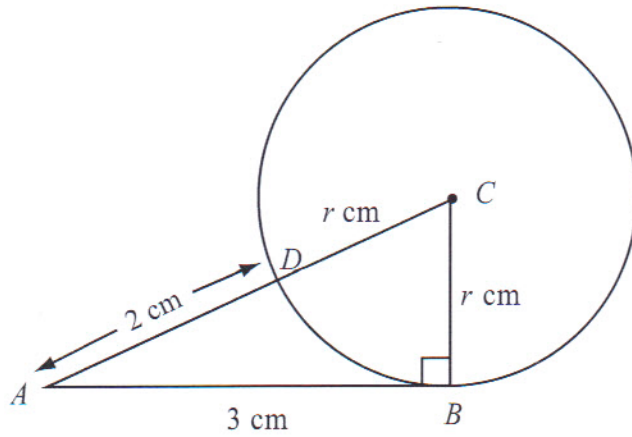


Diagram **NOT** accurately drawn

B and D are points on a circle, centre C .
 AB is the tangent to the circle at B .
 ADC is a straight line.
 $AB = 3$ cm.
 $AD = 2$ cm.

The radius of the circle is r cm.
 Find the value of r .

$r = \dots\dots\dots$

(Total 5 marks)

Q20

Nov 06 44

25.

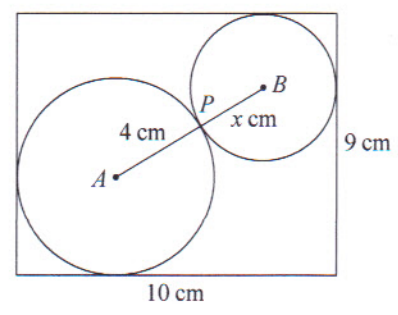


Diagram **NOT** accurately drawn

The diagram shows one disc with centre A and radius 4 cm and another disc with centre B and radius x cm.
 The two discs fit exactly into a rectangular box 10 cm long and 9 cm wide.
 The two discs touch at P .
 APB is a straight line.

(a) Use Pythagoras' Theorem to show that $x^2 - 30x + 45 = 0$

(4)

(b) Find the value of x .
 Give your value correct to 3 significant figures.

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

Q25

(Total 7 marks)

25.

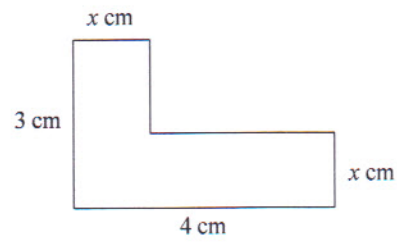


Diagram **NOT** accurately drawn

NOV 07
4H

The diagram shows a shape.
All the corners are right angles.
The area of the shape is 11 cm^2 .

(a) Show that $x^2 - 7x + 11 = 0$

(2)



Leave
blank

- (b) Solve $y^2 - 7y + 11 = 0$
Give your solutions correct to 3 significant figures.

1301 07 4H
Q25 cont.

.....
(3)

- (c) (i) Use your answer to part (b) to find the value of x in the diagram.

.....

- (ii) Give a reason for your answer to (i).

.....

.....

(2) Q25

(Total 7 marks)

