

12

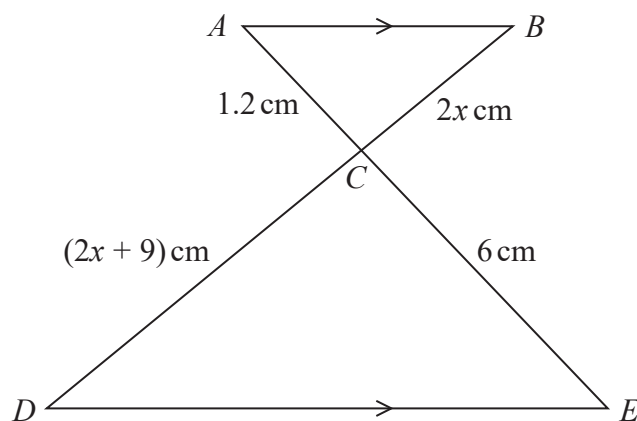


Diagram **NOT**
accurately drawn

ACE and BCD are straight lines.
 AB is parallel to DE

Work out the value of x

$x = \dots\dots\dots$

(Total for Question 12 is 3 marks)



16

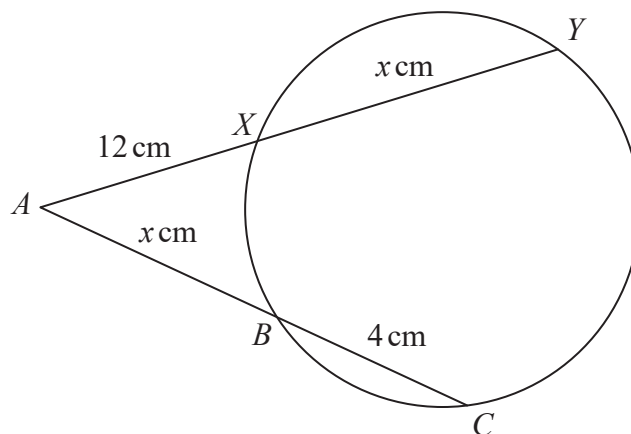


Diagram **NOT** accurately drawn

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The points B , C , Y and X lie on a circle.

AXY and ABC are straight lines.

$$AX = 12 \text{ cm} \quad XY = x \text{ cm} \quad AB = x \text{ cm} \quad BC = 4 \text{ cm}$$

(a) Show that $x^2 - 8x - 144 = 0$

(3)

(b) Find the length of AC .

Show your working clearly.

Give your answer correct to 3 significant figures.

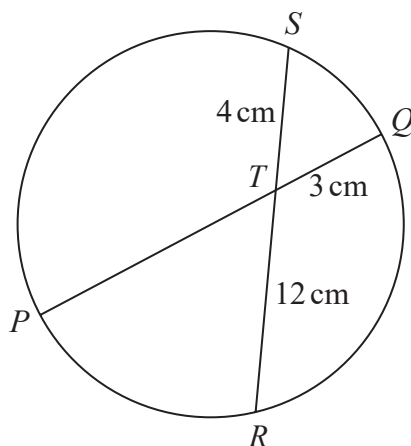
..... cm
(4)

(Total for Question 16 is 7 marks)



19

Diagram **NOT**
accurately drawn



PTQ is a diameter of a circle.

RTS is a chord of the circle.

$$TQ = 3 \text{ cm}$$

$$ST = 4 \text{ cm}$$

$$TR = 12 \text{ cm}$$

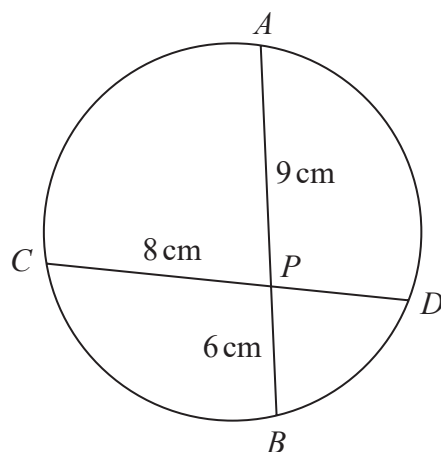
Calculate the radius of the circle.

..... cm

(Total for Question 19 is 3 marks)



18

Diagram **NOT**
accurately drawn APB and CPD are chords of a circle. $AP = 9\text{ cm}$ $PB = 6\text{ cm}$ $CP = 8\text{ cm}$ Calculate the length of PD .

..... cm

(Total for Question 18 is 2 marks)



18

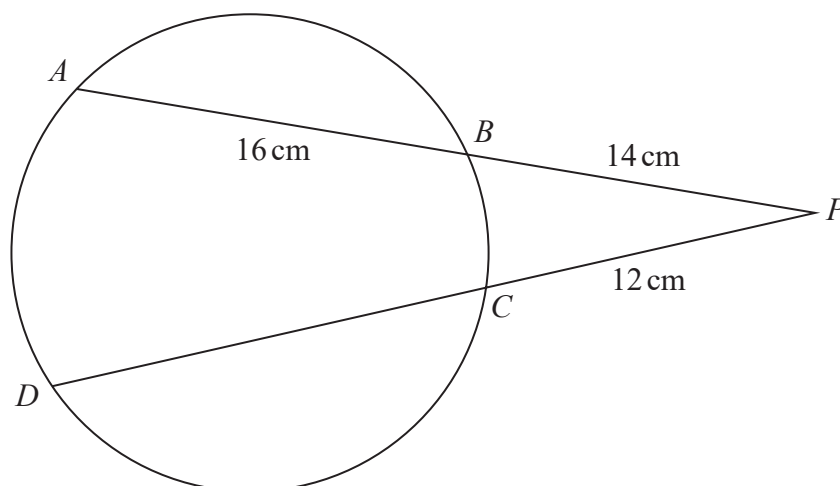


Diagram **NOT**
accurately drawn

A , B , C and D are points on a circle.

ABP and DCP are straight lines.

$$AB = 16 \text{ cm}$$

$$BP = 14 \text{ cm}$$

$$CP = 12 \text{ cm}$$

Work out the length of DC

..... cm

(Total for Question 18 is 3 marks)



22

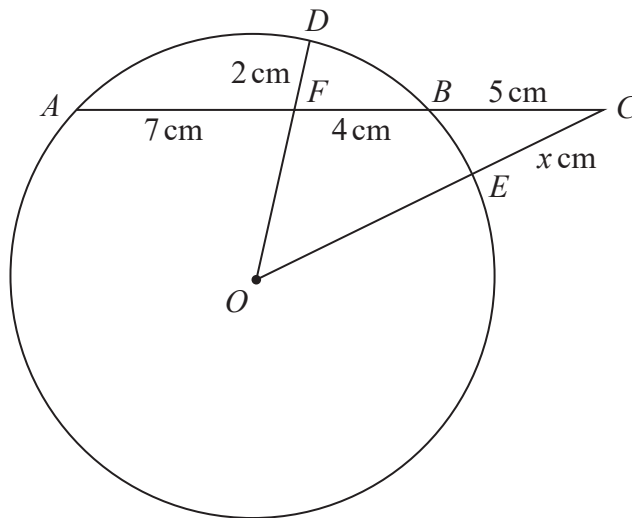


Diagram **NOT**
accurately drawn

A , D , B and E are points on a circle, centre O .
 $AFBC$, OEC and OFD are straight lines.

$AF = 7\text{ cm}$, $FB = 4\text{ cm}$, $BC = 5\text{ cm}$, $FD = 2\text{ cm}$ and $CE = x\text{ cm}$.

Work out the value of x .
Show your working clearly.

$x = \dots\dots\dots$

(Total for Question 22 is 6 marks)



- 22 ABC is an isosceles triangle in a horizontal plane.
The point T is vertically above B .

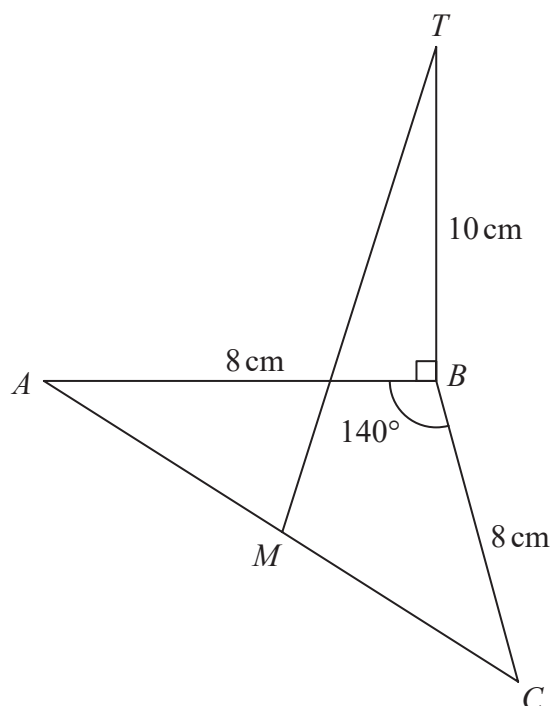


Diagram **NOT**
accurately drawn

Angle $ABC = 140^\circ$

$AB = BC = 8\text{ cm}$

$TB = 10\text{ cm}$

M is the midpoint of AC .

Calculate the size of the angle between MT and the horizontal plane ABC .
Give your answer correct to one decimal place.

(Total for Question 22 is 4 marks)



23 AEC and BED are chords of a circle.

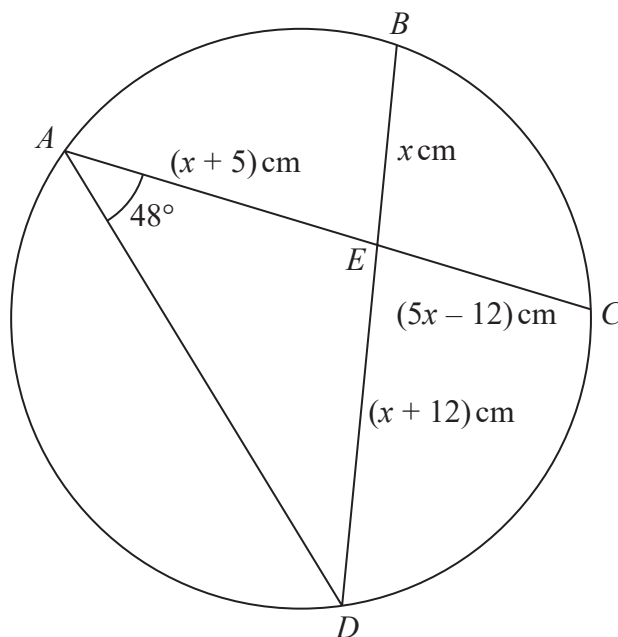


Diagram **NOT**
accurately drawn

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$$AE = (x + 5) \text{ cm} \quad BE = x \text{ cm} \quad CE = (5x - 12) \text{ cm} \quad DE = (x + 12) \text{ cm}$$

$$\text{Angle } DAE = 48^\circ$$

Work out the size of angle ADE

Give your answer correct to one decimal place.

(Total for Question 23 is 5 marks)



26 A, B, D and E are points on a circle. ABC and EDC are straight lines.

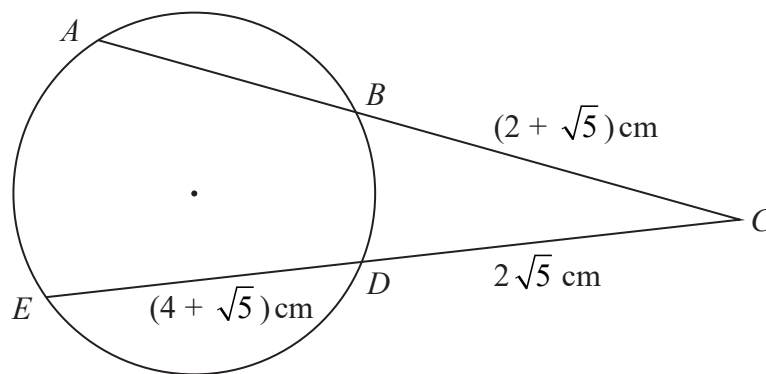


Diagram **NOT** accurately drawn

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$$BC = (2 + \sqrt{5}) \text{ cm}$$

$$ED = (4 + \sqrt{5}) \text{ cm}$$

$$DC = 2\sqrt{5} \text{ cm}$$

Show that the length of AB is $(p\sqrt{5} + q) \text{ cm}$, where p and q are integers whose values are to be found.

Show your working clearly.

(Total for Question 26 is 5 marks)

