

Name: _____

Exam Style Questions

Intersecting Chord Theorem
Intersecting Secant Theorem



Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

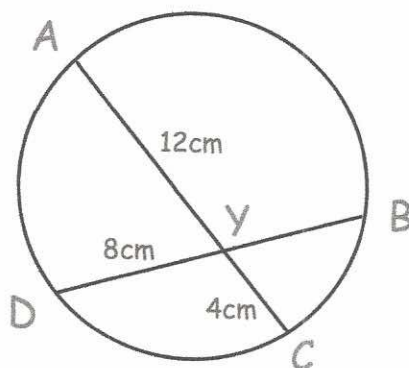
Revision for this topic

www.corbettmaths.com/contents

Video 368



1. A, B, C and D are points on a circle.
Y is the point of intersection of the two chords AC and BD.



AY = 12cm DY = 8cm CY = 4cm

Find the length of BY.

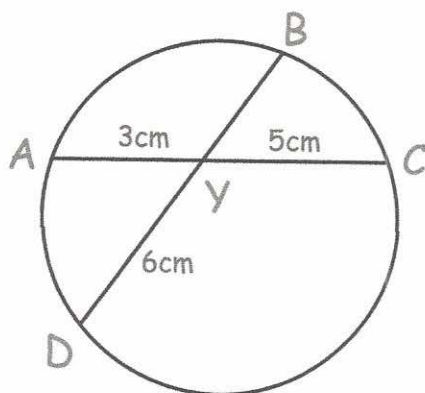
$$12 \times 4 = 48$$

$$48 \div 8 = 6$$

6cm

(2)

2. A, B, C and D are points on a circle.
Y is the point of intersection of the two chords AC and BD.



AY = 3cm DY = 6cm CY = 5cm

Find the length of BD.

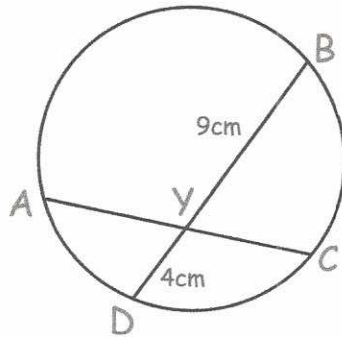
$$3 \times 5 = 15$$

$$15 \div 6 = 2.5$$

2.5cm

(2)

3. AC and BD are chords that intersect at the point Y.
The chord BD bisects AC.



BY = 9cm DY = 4cm
Find the length of CY.

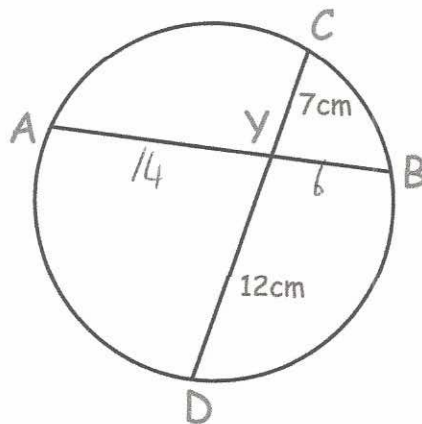
$$4 \times 9 = 36$$

$$\sqrt{36} = 6$$

6 cm

(2)

4. AB and CD are chords of a circle.



DY = 12cm CY = 7cm
The chord AB has a total length of 20cm.
AY > YB

$$7 \times 12 = 84$$

Calculate the length of AY.

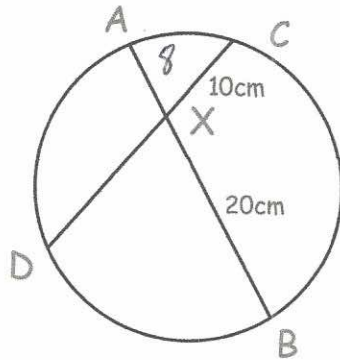
$$6 \times 14 = 84$$

$$6 + 14 = 20$$

14 cm

(4)

5. AB and CD are chords that intersect at the point X.



The ratio of AX to XB is 2:5.
Find the length of DX.

$$20 \div 5 = 4$$

$$4 \times 2 = 8$$

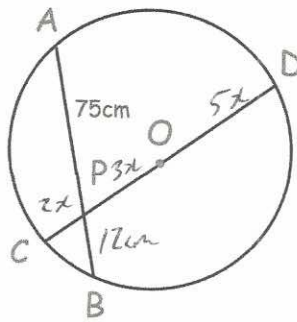
$$8 \times 20 = 160$$

$$160 \div 10$$

$$\frac{160}{10} = 16 \text{ cm}$$

(3)

6. AB is a chord of the circle, centre O.
CD is the diameter.
AB and CD intersect at P.



AP = 75cm and AB = 87cm
CP:PO = 2:3

Calculate the circumference of the circle.

$$2x \times 8x = 900$$

$$16x^2 = 900$$

$$x^2 = 56.25$$

$$x = 7.5$$

$$\therefore 10x = 75$$

$$12 \times 75 = 900$$

$$CP \times PD = 900$$

$$C = \pi \times d$$

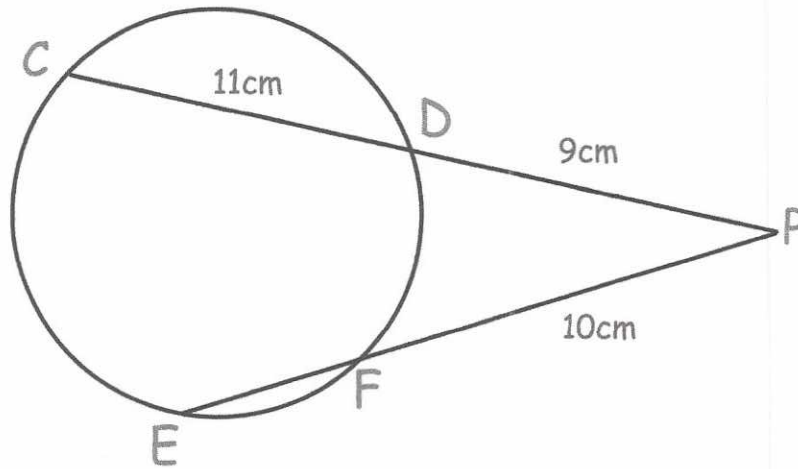
$$C = \pi \times 75$$

$$\frac{75\pi \text{ cm}}{\dots}$$

(4)

$$(235.62 \text{ cm})$$

7. CD and EF are chords of the circle below.
The chords meet at the point P, which is outside of the circle.



$$CD = 11\text{cm}$$

$$PD = 9\text{cm}$$

$$PF = 10\text{cm}$$

Work out the length of EF.

$$9 \times 20 = 10 \times PE$$

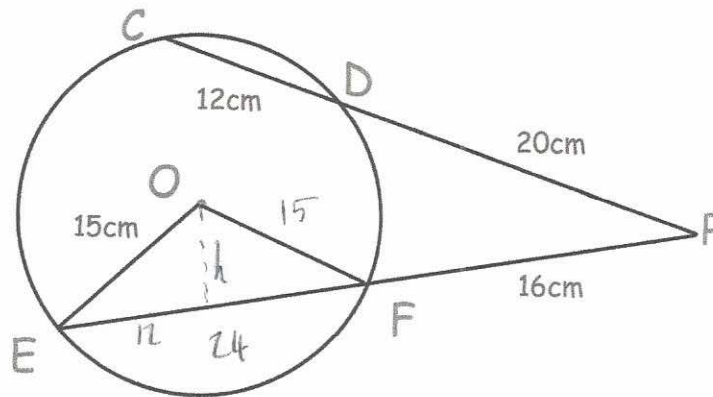
$$180 = 10 \times PE$$

$$PE = 18$$

$$EF = 8$$

.....
8cm
.....
(2)

8. CD and EF are chords of the circle with centre O. The chords meet at the point P, which is outside of the circle.



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

$$PD = 20\text{cm}$$

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

$$OE = 15\text{cm}$$

Calculate the area of triangle OEF.

$$20 \times 32 = 16 \times PE$$

$$640 = 16 \times PE$$

$$PE = 40\text{cm}$$

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

$$EF = 24\text{cm}$$

$$12^2 + h^2 = 15^2$$

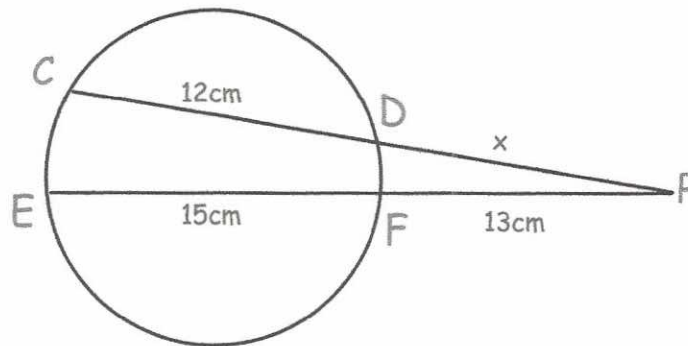
$$h^2 = 81$$

$$h = 9$$

$$\frac{108\text{cm}^2}{(6)}$$

$$\frac{1}{2} \times 24 \times 9$$

9. CD and EF are chords of the circle with centre O.
The chords meet at the point P, which is outside of the circle.



CD = 12cm PF = 13cm EF = 15cm

- (a) Show that $x^2 + 12x - 364 = 0$

$$x(x+12) = 13 \times 28$$

$$x^2 + 12x = 364$$

$$x^2 + 12x - 364 = 0$$

.....
(2)

- (b) Find the value of x

$$(x-14)(x+26) = 0$$

$$x = 14$$

.....
(2)