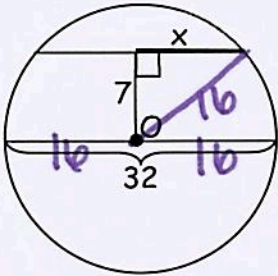


Chords

The arcs that intersect congruent chords are congruent as well.

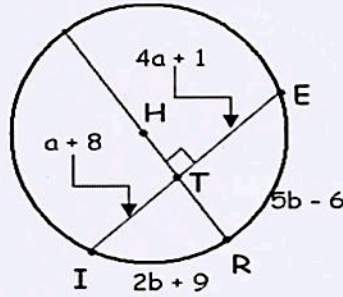
Any part of a diameter drawn perpendicular to a chord cuts the chord into two = parts

1. $x = 14.387$



$$x^2 + 7^2 = 16^2$$

2. $a = \quad b = \quad$



$$4a+1 = a+8$$

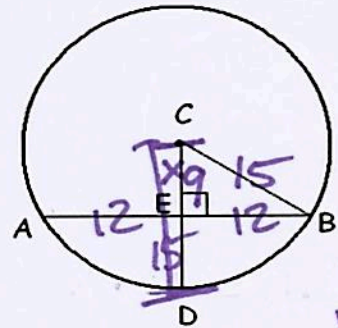
$$3a = 7$$

$$a = \frac{7}{3} = 2.333$$

$$2b+9 = 5b-6$$

$$15 = 3b \quad b = 5$$

3. $ED = \quad$



Circle C has a diameter of 30 cm and $m\overline{AB}$ is 24 cm. What is the measure of \overline{ED} ?

$$x^2 + 12^2 = 15^2$$

$$x = 9$$

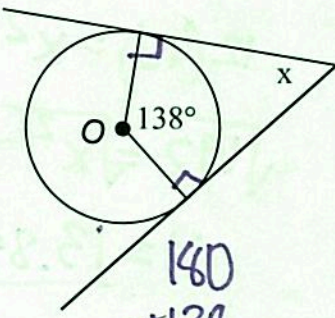
$$15 - 9 = 6$$

Tangents

Right angle formed where radius intersects tangent...

If 2 tangents are drawn from the same point outside of a circle, they are equal from that point to the point of tangency.

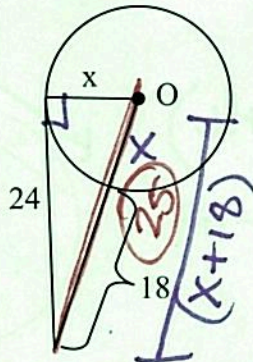
1. $X = 42^\circ$



$$\begin{array}{r} 180 \\ + 138 \\ \hline 318 \end{array}$$

$$\begin{array}{r} 360 \\ - 318 \\ \hline 42 \end{array}$$

2. $X = 7$

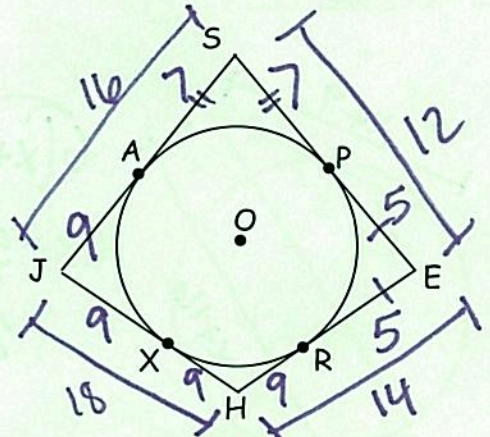


$$x^2 + 24^2 = (x+18)^2$$

$$x^2 + 576 = x^2 + 36x + 324$$

$$252 = 36x \quad x = 7$$

3. Perimeter = 60

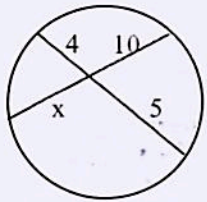


Quadrilateral JSEH is circumscribed about circle P. $JS=16, PE=5, HJ=18, HX=9$.

2 Chords intersecting inside a circle...

part * part = part * part

1. Find x 2

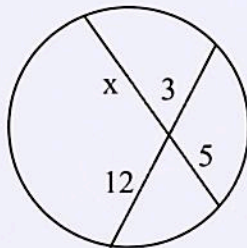


$$4 \cdot 5 = 10 \cdot x$$

$$20 = 10x$$

$$x = 2$$

2. Find x 7.2

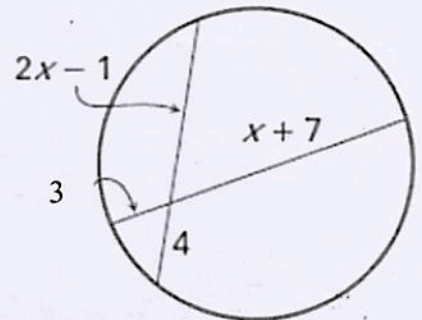


$$5 \cdot x = 3 \cdot 12$$

$$5x = 36$$

$$x = 7.2$$

3. Find x 5



$$4(2x-1) = 3(x+7)$$

$$8x-4 = 3x+21$$

$$5x = 25$$

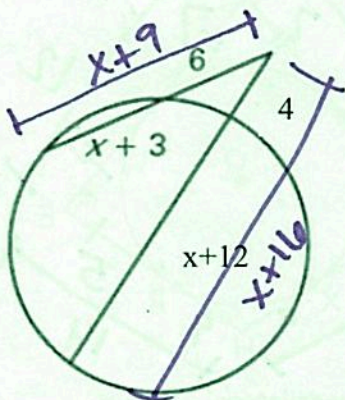
$$x = 5$$

Tangents and Secants

outside * whole = outside * whole

Find x. Round answer to nearest thousandth.

1. x = 5



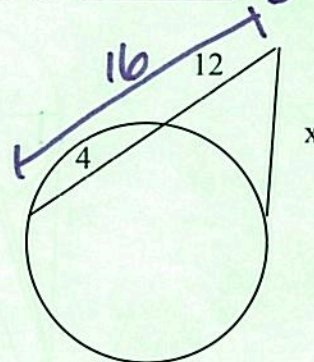
$$6(x+9) = 4(x+16)$$

$$6x+54 = 4x+64$$

$$2x = 10$$

$$x = 5$$

2. x = 13.856



$$12(16) = x^2$$

$$\sqrt{192} = \sqrt{x^2}$$

$$x = \underline{13.856}$$

Central & Inscribed Angles

Central Angle = Arc Measure
 Inscribed Angle = $\frac{1}{2}$ Arc Measure

1. $x = \underline{38}$
 $y = \underline{76}$
 $z = \underline{142}$

2. $x = \underline{105}$

3. $x = \underline{73}$
 $y = \underline{48}$

4. $m\widehat{BC} = 88^\circ$
 $m\widehat{AC} = \underline{92^\circ}$
 $m\angle ABC = \underline{46^\circ}$

Angles Created Inside and Outside of a Circle

Angle formed inside Circle = $\frac{1}{2}$ (Arc 1 + Arc 2)
 Angle formed outside Circle = $\frac{1}{2}$ (Arc 1 - Arc 2)

Arcs 1 & 2 are the intercepted arcs

1. $x = \underline{55^\circ}$

2. $x = \underline{115^\circ}$

$x = \frac{1}{2}(86 + 24)$

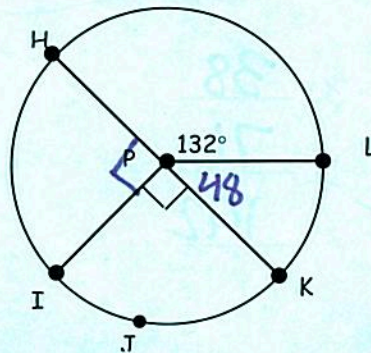
$x = \frac{1}{2}(3x - 145 + 30)$
 $x = \frac{1}{2}(3x - 115)$
 $2x = 3x - 115$
 $-x = -115$
 $x = 115$

5. Find the measure of these arcs. \overline{HK} is a diameter. P is the center of the circle

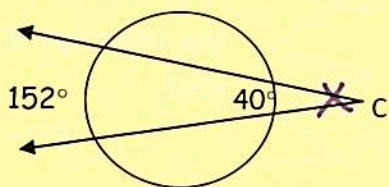
$$m\widehat{KL} = \underline{48^\circ}$$

$$m\widehat{HI} = \underline{90^\circ}$$

$$m\widehat{HJL} = \underline{228^\circ}$$

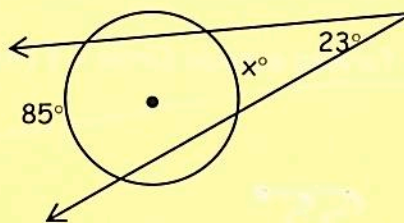


3. $m\angle C = \underline{56^\circ}$



$$x = \frac{1}{2}(152 - 40)$$

4. $x = \underline{39^\circ}$



$$23 = \frac{1}{2}(85 - x)$$

$$46 = 85 - x$$

$$-39 = -x$$