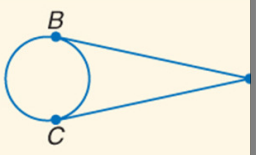
A

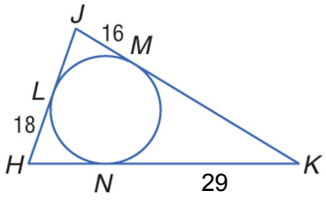
THEOREM 10.11

If two segments from the same exterior point are tangent to a circle, then they are congruent.

Example: $\overline{AB} \cong \overline{AC}$

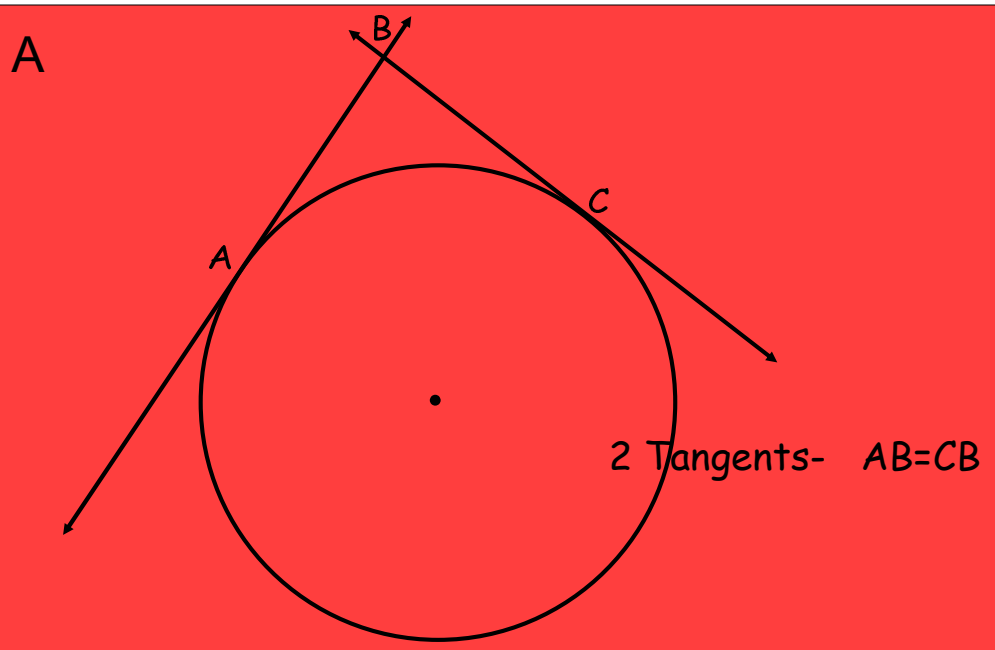


Find the perimeter of Triangle HJK with the given measurements.



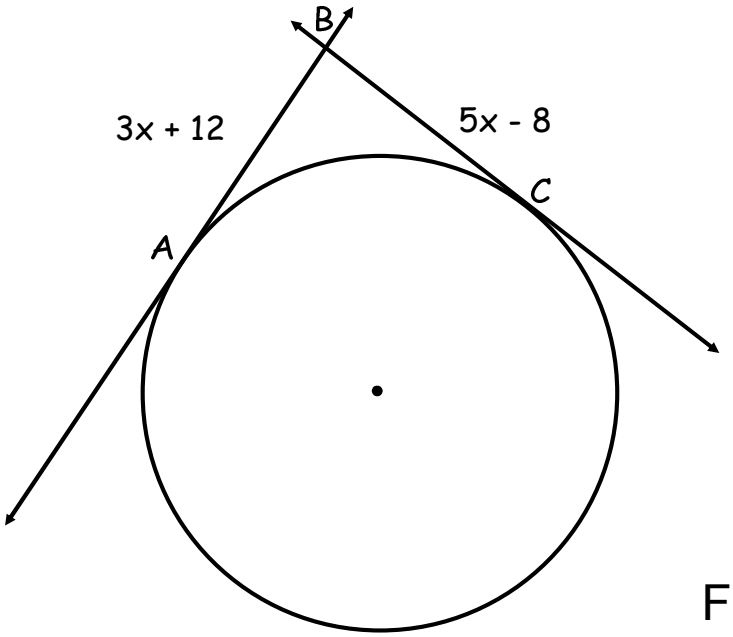
Mar 10-8:24 PM

A



Jan 10-12:57 PM

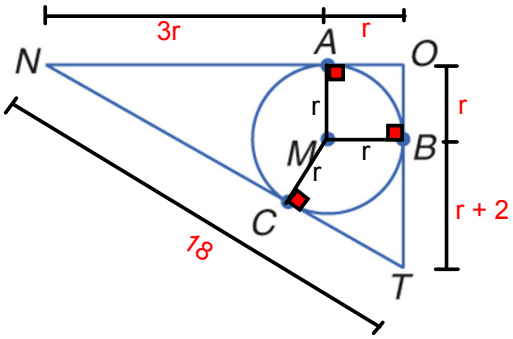
A



Find BC

Mar 2-6:57 PM

A Use the measures below to Find the radius, r.

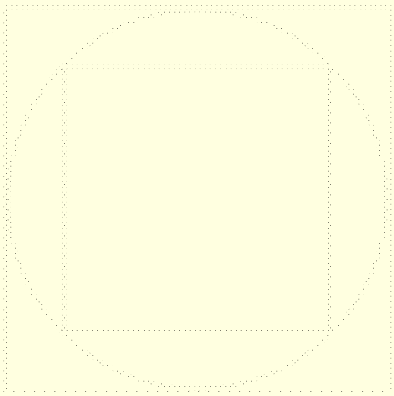


r = 4

Mar 10-8:35 PM

B 1. Draw a circle.
2. Draw a square circumscribed about(around) the circle.
3. Draw an inscribed square, in the circle.
4. What can you identify in the diagram?

Click below



Circle- Radius- x cm Find relationship between radius and either square

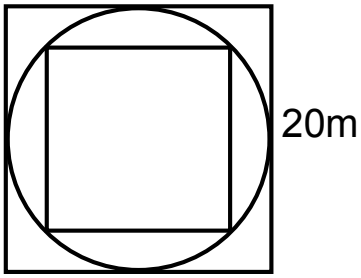
Relation to Circle
Circumscribed Square
Circle Diameter = Square Side
Circle radius = 1/2 Square side

Relation to Circle
Inscribed Square
Circle Diameter = Square Diagonal
Circle radius = 1/2 Square Diagonal

Mar 5-10:26 AM

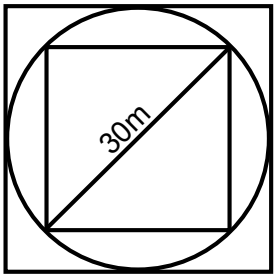
B Find the radius

1)



circle radius is half the circumscribed (outside) square side. Since the side = 20m, r =10m

2)



circle radius is half the inscribed (inside) square diagonal. Since the diagonal = 30m, r =15m

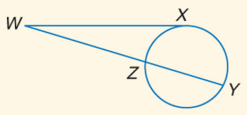
Mar 10-8:58 PM

C

THEOREM 10.17

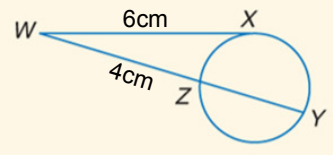
If a tangent segment and a secant segment a are drawn to circle from an exterior point, then the square of the measure of the tangent segment is equal to the product of the measures of the secant segment and its external secant segment.

Example: $WX \cdot WX = WZ \cdot WY$



$WX^2 = WZ \cdot WY$

Solve for WY, when WY = n+4

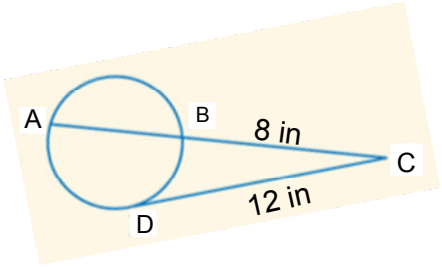


$WX^2 = WZ * WY$
$6^2 = 4(n + 4)$
$36 = 4n + 16$
$20 = 4n$
$5 = n$
$WY = n + 4$
$WY = 5 + 4 =$ 9cm

Mar 10-9:08 PM

C

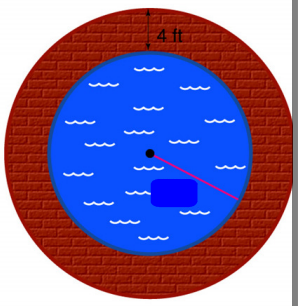
Solve for AC, when AC = x + 8



$DC^2 = BC * AC$
$12^2 = 8(x + 8)$
$144 = 8x + 64$
$80 = 8x$
$10 = x$
$AC = x + 8$
$AC = 10 + 8 =$ 18 in

Mar 10-9:34 PM

D **POOLS** The Patels have a circular pool with a Circumference of 24π feet. They plan on installing a 4-foot-wide walkway around the pool. What will be the area of the walkway? Leave in terms of π



How to Solve:

1) Understand that the area of the path= area of big circle - area of little circle

2) Know that Circumference= πd

3) If $C = 24\pi$, and $C = \pi d$, then $d = 24$.

4) radius= 1/2 of D, so r = 12 ft (small circle)

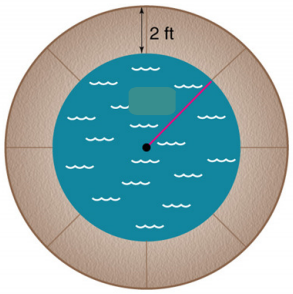
5) The radius of big circle is 4 ft wider. 12+4=16

Small Circle **Big Circle**

r = 12 ft **r = 16 ft**

Mar 10-10:34 PM

D **POOLS** The Shoemakers have a circular pond with Circumference of 8π feet. They plan on installing a 2-foot-wide walkway around the pond. What will be the area of the walkway? Leave in terms of π.



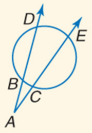
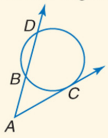
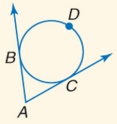
Mar 10-10:36 PM

E

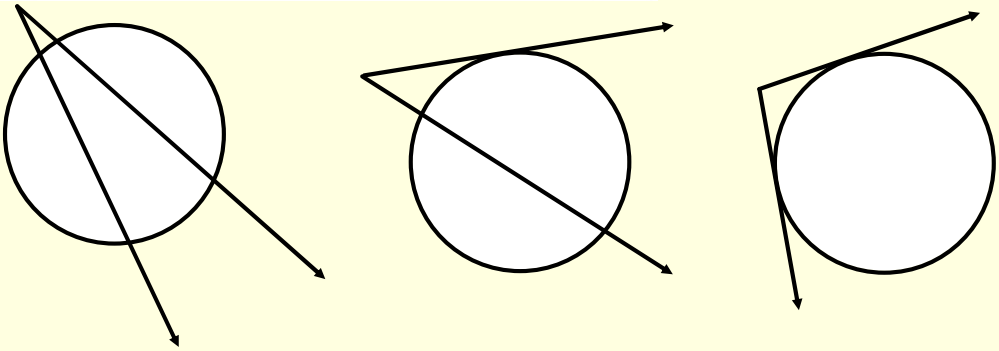
Intersections Outside a Circle

THEOREM 10.14

If two secants, a secant and a tangent, or two tangents intersect in the exterior of a circle, then the measure of the angle formed is one-half the positive difference of the measures of the intercepted arcs.

Two Secants	Secant-Tangent	Two Tangents
		
$m\angle A = \frac{1}{2}(m\overset{\frown}{DE} - m\overset{\frown}{BC})$	$m\angle A = \frac{1}{2}(m\overset{\frown}{DC} - m\overset{\frown}{BC})$	$m\angle A = \frac{1}{2}(m\overset{\frown}{BDC} - m\overset{\frown}{BC})$

- 2 Secants
- 1 Secant and 1 Tangent
- 2 Tangents

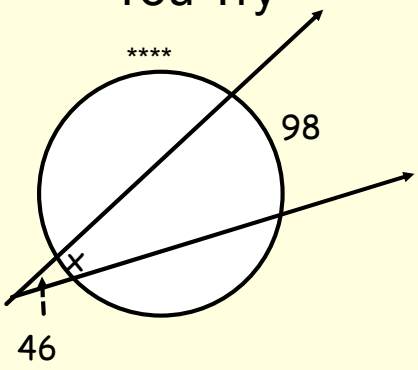


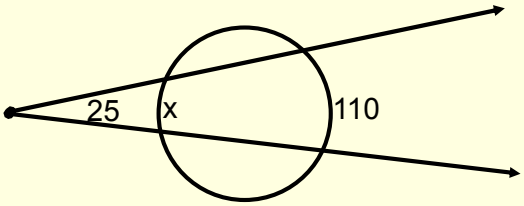
Mar 5-7:47 AM

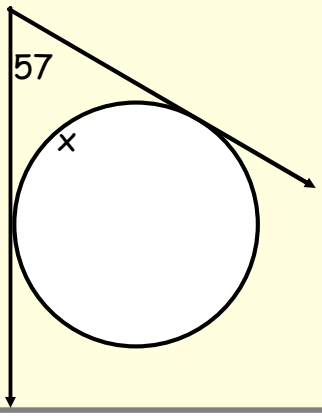
E

You Try

****

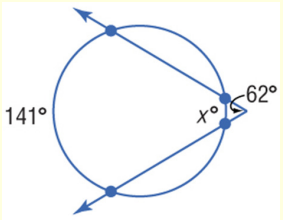






Mar 3-10:31 AM

E Find x



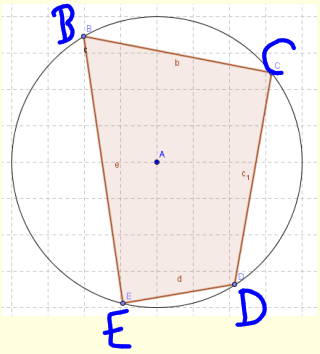
Jan 10-2:15 PM

REVIEW

Mar 10-10:06 PM

Quadrilaterals Inscribed in Circles

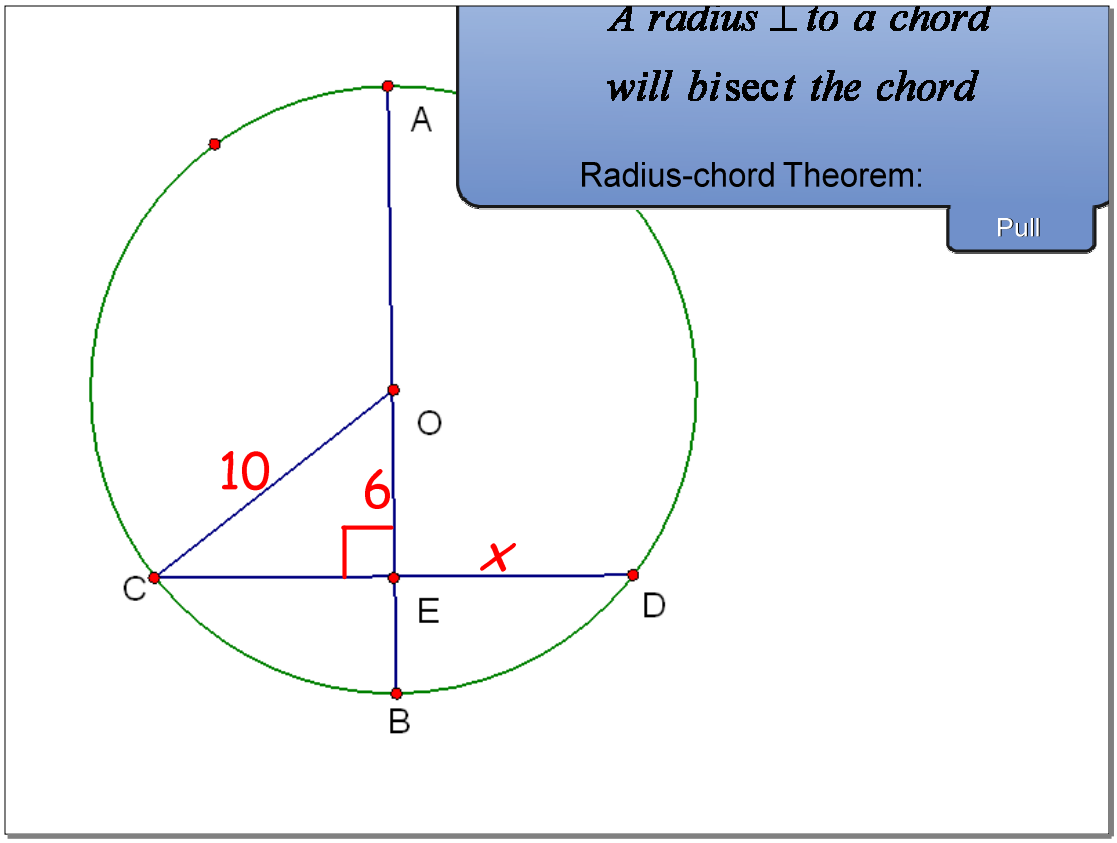
Now, you try!



A) Given Quadrilateral BCDE, and m ∠D = 65°, find m $\overset{\frown}{EBC}$.

B)Use Properties of inscribed angles to show why m ∠E + m ∠C = 180°.

Dec 20-2:29 PM



May 11-8:50 AM