CC Geometry Unit 8 Review packet

Tuesday, May 18, 2021 9:32 AM

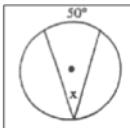
CC Geometry...

CC Geometry...

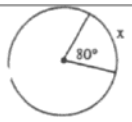
Name Quang Huynh Date

Unit 8: Circles Review Packet

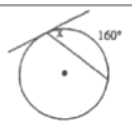
For each of the following, use the diagram to find the value for x.



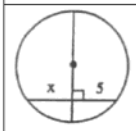
$x =$ 50



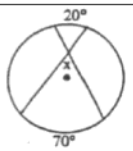
$x =$ 80



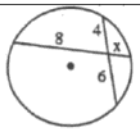
$x =$ 80



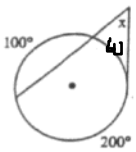
$x =$ 5



$x =$ 70

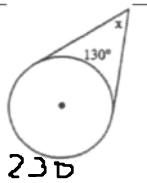


$x =$ 3



$\frac{200 - 60}{2}$

$x =$ 70

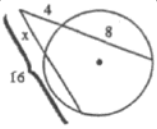


230

$x = \frac{230 - 130}{2}$

$\frac{100}{2}$

$x =$ 50

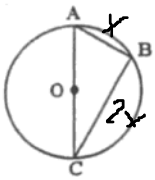


$x =$ 3

In circle O, the ratio of $\overset{\frown}{BC}$ to $\overset{\frown}{AB}$ is 2: 1.

(a) What is the measure of $\angle ACB$? 30

(b) What is the measure of $\angle ABC$? 60



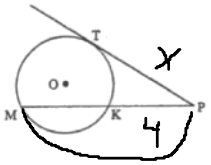
$x = 60$

In the following diagram, $\overline{PT}$ is tangent to circle O at T, and $\overline{PKT}$ is a secant. If $PK = 4$ and $PM = 9$, find PT.

$x^2 = 4 \cdot 9$

$x^2 = 36$

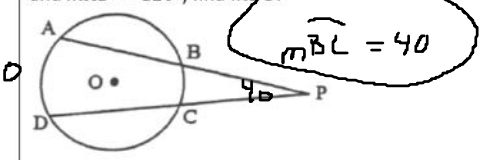
$x = 6$



9

$PT = 6$

$\overline{PBA}$ and $\overline{PCD}$ are secant to circle O. If $m\angle P = 40°$ and $m\overset{\frown}{AD} = 120°$, find $m\overset{\frown}{BC}$.



120

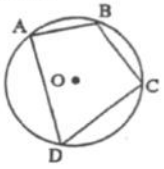
$m\overset{\frown}{BC} = 40$

$40 = \frac{120 - x}{2}$

$80 = 120 - x$

$-40 = -x$

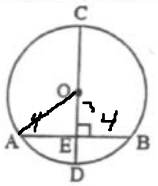
In the following diagram, quadrilateral ABCD is inscribed in circle O. If $m\angle A = 4x - 15$, $m\angle B = 3y + 1$, $m\angle C = 81 - x$, $m\angle D = y + 47$. Solve for x and y.



$x = 38$

$y = 33$

In circle O, chord $AB = 8$ and $OE = 3$. Find OA.



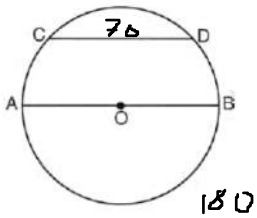
$OA = 5$

$4^2 + 3^2 = x^2$

$16 + 9 = x^2$

$25 = x^2$

In the diagram below of circle O, diameter $\overline{AB}$ is parallel to chord $\overline{CD}$.

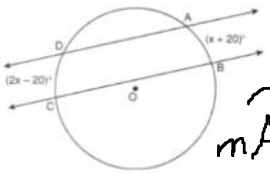


$\frac{180 - 70}{2} = 55$

If $m\overset{\frown}{CD} = 70$, what is $m\overset{\frown}{AC}$?

1 110
2 70
3 55
4 35

In the diagram below, two parallel lines intersect circle O at points A, B, C, and D, with $m\overset{\frown}{AB} = x + 20$ and $m\overset{\frown}{DC} = 2x - 20$. Find $m\overset{\frown}{AB}$.



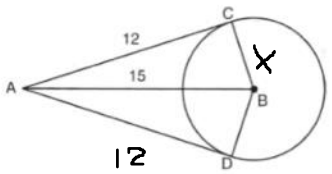
$m\overset{\frown}{AB} = 60$

$2x - 20 = x + 20$

$x = 40$

In the diagram below, $\overline{AC}$ and $\overline{AD}$ are tangent to circle B at points C and D, respectively, and $\overline{BC}$, $\overline{BD}$, and $\overline{BA}$ are drawn.

$\sqrt{15^2 + 12^2} = 3^2$

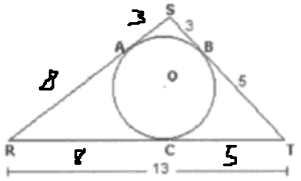


If $AC = 12$ and $AB = 15$, what is the length of $\overline{BD}$?

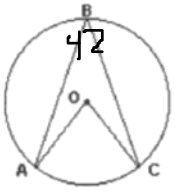
1 5.5
2 9
3 12
4 18

In the diagram, $\overline{RS}$, $\overline{ST}$, and $\overline{TR}$ are tangent to circle O at A, B, and C, respectively. If $SB = 3$, $BT = 5$, and $TR = 13$, what is RS?

1. 11 3. 15
2. 12 4. 21



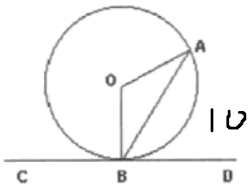
In the diagram of circle O, the measure of $\angle ABC$ is 42°. What is the number of degrees in the measure of $\angle AOC$?



$m\angle AOC = 84$

In the diagram, $\overline{CD}$ is tangent to circle O at B. $\overline{AO}$ and $\overline{BO}$ are radii, and chord $\overline{AB}$ is drawn. If m $\angle AOB = 108$, find m $\angle ABD$.

1. 27 3. 54
2. 36 4. 72



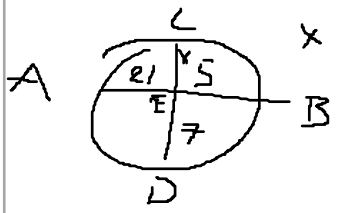
$\frac{108}{2} = 54$

In a circle, chords $\overline{AB}$ and $\overline{CD}$ intersect at E. If $AE = 21$, $EB = 5$, and $ED = 7$, find CE.

1. 3/5 3. 5
2. 5/3 4. 15

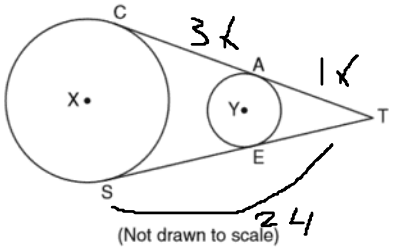
$7x = 21 \cdot 5$

$x = 15$



4 point Regents question:

In the diagram below, circles X and Y have two tangents drawn to them from external point T. The points of tangency are C, A, S, and E. The ratio of TA to AC is 1:3. If $TS = 24$, find the length of $\overline{SE}$.



$3x \cdot x = 24x$

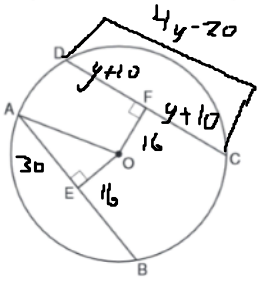
$3x^2 = 24x$

$3x = 24$

$SE = 8$

6 point Regents question:

In circle O shown below, chords $\overline{AB}$ and $\overline{CD}$ and radius $\overline{OA}$ are drawn, such that $\overline{AB} \cong \overline{CD}$, $\overline{OE} \perp \overline{AB}$, $\overline{OF} \perp \overline{CD}$, $OF = 16$, $CF = y + 10$, and $CD = 4y - 20$.



Determine the length of $\overline{DF}$.

$2y + 20 = 4y - 20$

$40 = 2y$

$y = 20$

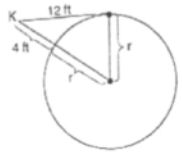
$DF = 30$

Determine the length of $\overline{OA}$.

$16^2 + 30^2 = x^2$

$x = 34$

Kimmy wants to determine the radius of a circular pool without getting wet. She is located at point K, which is 4 feet from the pool and 12 feet from the point of tangency, as shown in the accompanying diagram. What is the radius of the pool?



$r^2 + 12^2 = (r + 4)^2$

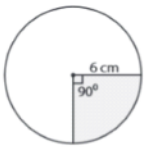
$r^2 + 144 = r^2 + 8r + 16$

$144 = 8r + 16$

$8r = 128$

$r = 16$

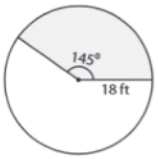
Determine the area of the shaded sector.



Area in terms of pi = $\frac{20\pi}{6}$

Area rounded to nearest tenth = $10.27 cm^2$

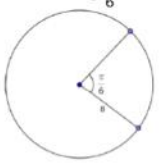
Determine the area of the shaded sector.



Area in terms of pi = 101π

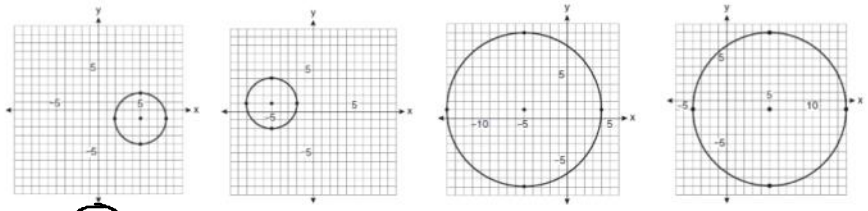
Area rounded to nearest tenth = $317.06 cm^2$

Given the following diagram, what is the length of the arc created by the central angle measuring $\frac{\pi}{6}$ radians?

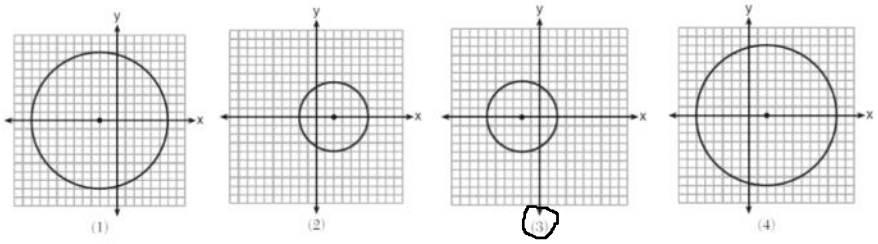


Find the length of the arc created by a central angle that measures $\frac{\pi}{4}$ radians within a circle whose radius is 15. Round your answer to the nearest tenth.

Which graph represents a circle with the equation $(x-5)^2+(y+1)^2=9$?



Which graph represents a circle whose equation is $(x+2)^2+y^2=16$?



Which equation of a circle will have a graph that lies entirely in the first quadrant?

1 $(x-4)^2+(y-5)^2=9$
2 $(x+4)^2+(y+5)^2=9$
3 $(x+4)^2+(y+5)^2=25$
4 $(x-5)^2+(y-4)^2=25$

The equation of a circle is $(x-2)^2+(y+5)^2=32$. What are the coordinates of the center of this circle and the length of its radius?

1 $(-2,5)$ and 16
2 $(2,-5)$ and 16
3 $(-2,5)$ and $4\sqrt{2}$
4 $(2,-5)$ and $4\sqrt{2}$

What is an equation of a circle with its center at $(-3, 5)$ and a radius of 4?

1 $(x-3)^2+(y+5)^2=16$

2 $(x+3)^2+(y-5)^2=16$

3 $(x-3)^2+(y+5)^2=4$

4 $(x+3)^2+(y-5)^2=4$

What is an equation of the circle with a radius of 5 and center at $(1, -4)$?

1 $(x+1)^2+(y-4)^2=5$

2 $(x-1)^2+(y+4)^2=5$

3 $(x+1)^2+(y-4)^2=25$

4 $(x-1)^2+(y+4)^2=25$

What are the center and radius of a circle whose equation is $(x-A)^2+(y-B)^2=C$?

1 center = (A, B); radius = C

2 center = $(-A, -B)$; radius = C

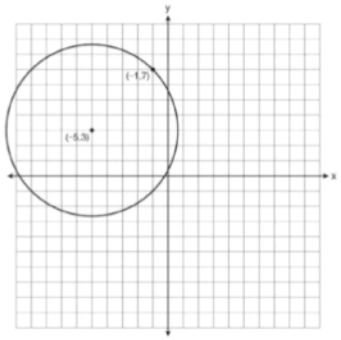
3 center = (A, B); radius = $\sqrt{C}$

4 center = $(-A, -B)$; radius = $\sqrt{C}$

Write an equation of a circle whose center is $(-3, 2)$ and whose diameter is 10.

$(x+3)^2+(y-2)^2=2\sqrt{5}$

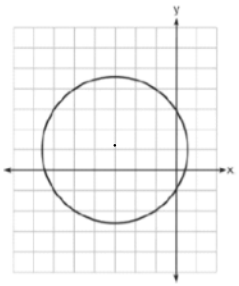
A circle shown in the diagram below has a center of $(-5, 3)$ and passes through point $(-1, 7)$.



Write an equation that represents the circle.

$(x-3)^2+(y+5)^2=\sqrt{32}$

Which equation is represented by the graph below?



1 $(x-3)^2+(y+1)^2=5$

2 $(x+3)^2+(y-1)^2=5$

3 $(x-1)^2+(y+3)^2=13$

4 $(x+3)^2+(y-1)^2=13$

Determine the center and radius of the following circle:

$x^2 - 24x + y^2 + 6y = -137$

$x^2 - 24x + (-12) + y^2 + 6y + 3 = -137$

$(x - 12)^2 + (y + 3)^2 = 16$

Center = $(12, -3)$

Radius = 4

Determine the center and radius of the following circle:

$x^2 + 2x + y^2 - 10y - 55 = 0$

$(x + 2x + 1) + y^2 - 10y + (-5) = 55$

$(x + 1)^2 + (y - 5)^2 = 81$

Center = $(-1, 5)$

Radius = 9

Determine the center and radius of the following circle:

$x^2 + y^2 + 4y - 12 = 0$

$x^2 + y^2 + 4y + 2 = 12$

$(x)^2 + (y + 2) = 14$

Center = $(0, -2)$

Radius = $\sqrt{14}$