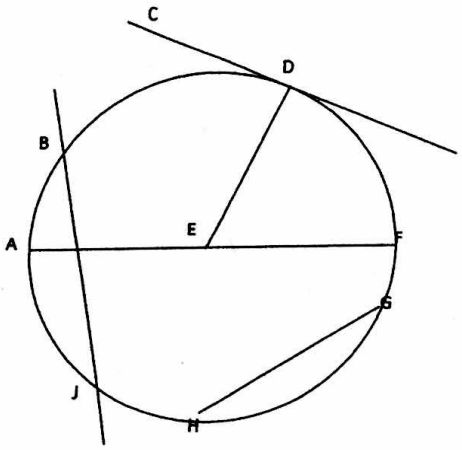
Math III Unit 6 Quest Review

Name Key



Identify the following:

Circle $\odot E$

Radius $\overline{ED}$ or $\overline{EF}$ or $\overline{EA}$

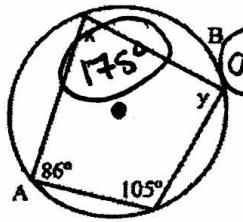
Chord $\overline{HG}$

Tangent $\overleftrightarrow{CD}$

Secant $\overleftrightarrow{JB}$

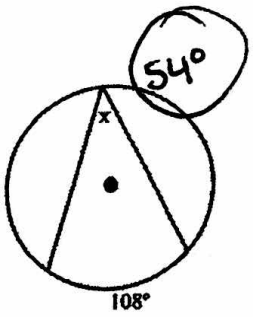
Minor Arc ex. $\overset{\frown}{BAJ}$

Major Arc ex. $\overset{\frown}{DBG}$



Given circle with center indicated and inscribed quadrilateral.

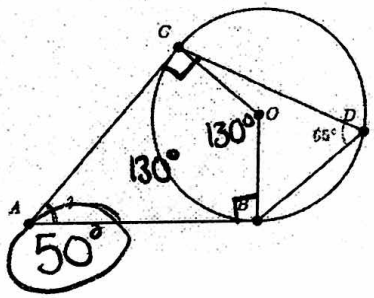
Find x and y

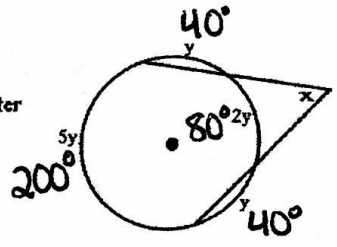


Given circle with center indicated.

Find x.

What is the measure of $\angle A$?





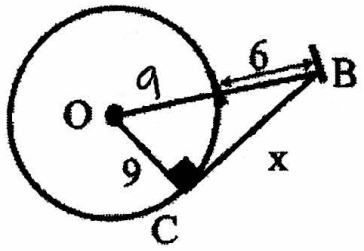
Given two secants, find x.
Hint: find y first.

$9y = 360°$

$y = 40°$

$x = 200° - 80°$

$x = 120° \neq 60$



$x^2 + 9^2 = 15^2$

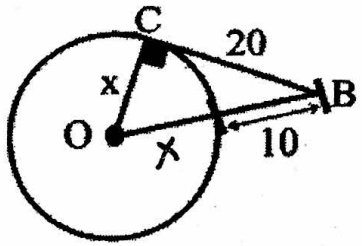
$x^2 + 81 = 225$

$x^2 = 144$

$x = 12$

$\overline{CB}$ tangent.

Find x.



$20^2 + x^2 = (x+10)^2$

$400 + x^2 = x^2 + 20x + 100$

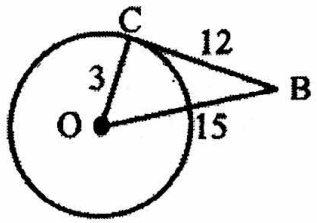
$400 = 20x + 100$

$300 = 20x$

$x = 15$

$\overline{CB}$ tangent.

Find x.



In the diagram at the left, is $\overline{CB}$ a tangent?

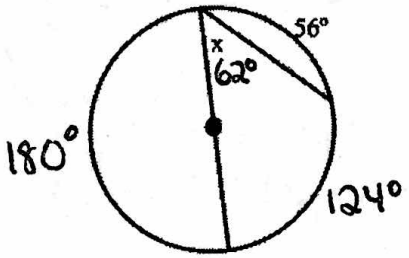
$(OB = 15)$

$3^2 + 12^2 = 15^2$

$9 + 144 = 225$

$153 \neq 225$

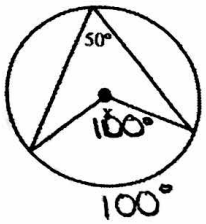
NO!



Given diameter.

Find x.

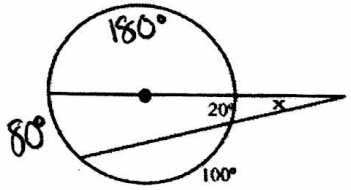
$62°$



Given circle with center indicated.

Find x.

100°



Given two secants with one going through the center of the circle, find x.

$x = 60°$

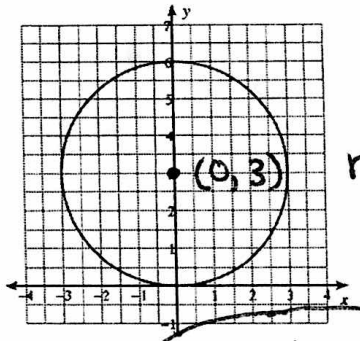
Write an equation for the following circles:

Center: (-11, -8)
Radius: 4

$(x+11)^2 + (y+8)^2 = 16$

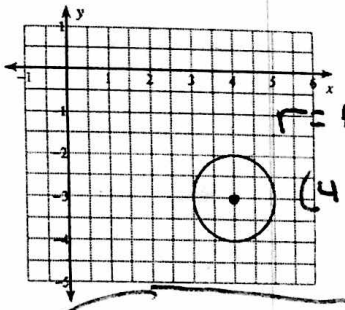
Center: (6, -15)
Radius: 8

$(x-6)^2 + (y+15)^2 = 64$



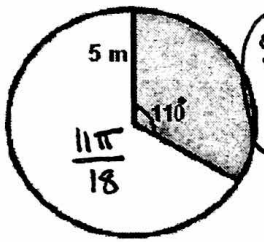
$r = 3$

$x^2 + (y-3)^2 = 9$



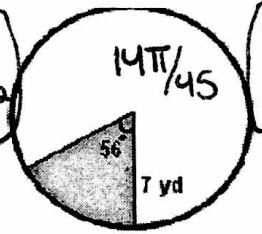
$(x-4)^2 + (y+3)^2 =$

For each circle, find the length of the given arc as well as the area of each shaded sector.



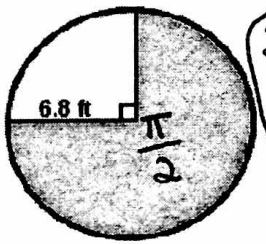
$S = 5.99\text{m}$

$A = 23.998\text{m}^2$



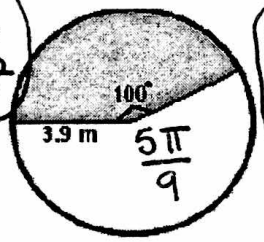
$S = 6.84\text{yd}$

$A = 23.95\text{yd}^2$



$S = 10.68\text{ft}$

$A = 36.32\text{ft}^2$



$S = 6.81\text{ m}$

$A = 13.27\text{m}^2$

Use completing the square to find the radius and center of each of the following:

$x^2 + 6x + y^2 - 10y - 78 = 0$

$x^2 + 6y \underline{+9} + y^2 - 10y \underline{+25} = 78 \underline{+9} \underline{+25}$

$(x+3)^2 + (y-5)^2 = 112$

$(-3, 5)$ $r = 10.58$

$x^2 - 14x + y^2 + 6y = 63$

$x^2 - 14x \underline{+49} + y^2 + 6y \underline{+9} = 63 \underline{+49} \underline{+9}$

$(x-7)^2 + (y+3)^2 = 121$

$(7, -3)$ $r = 11$

$x^2 + 8x + y^2 + 16y + 48 = 0$

$x^2 + 8x \underline{+16} + y^2 + 16y \underline{+64} = -48 \underline{+16} \underline{+64}$

$(x+4)^2 + (y+8)^2 = 32$

$(-4, -8)$ $r = 5.66$

$x^2 - 12x + y^2 - 8y = -23$

$x^2 - 12x \underline{+36} + y^2 - 8y \underline{+16} = -23 \underline{+36} \underline{+16}$

$(x-6)^2 + (y-4)^2 = 29$

$(6, 4)$ $r = 5.39$