

CODE RED – DO NOW

Complete Problems #1-3

1. What is located at $(2, -3)$?

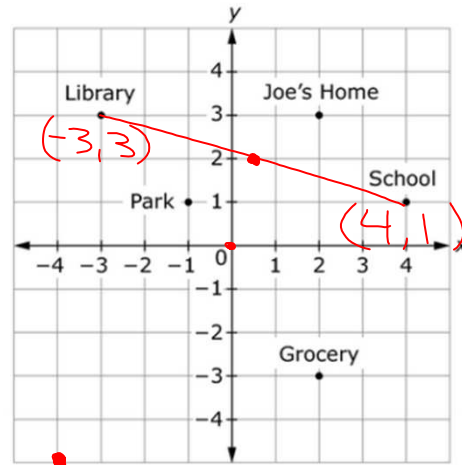
Grocery

2. What is the midpoint between the school and the library?

$(0.5, 2)$

3. Which location is furthest from the origin?

Library



EQUATIONS OF CIRCLES

SOL G.12

Learning Target: By the end of class today, I will be able to find the equation of a circle, given the radius and center, as evidenced by completing a class exit ticket with at least 70% accuracy.

Essential Question: How does the distance formula relate to an equation of a circle?

TODAY'S AGENDA

- ✓ DO NOW
- ✓ Circles Quiz Review
- ✓ Equation of a Circle
- ✓ Kahoot!
- ✓ Exit Ticket

CODE YELLOW

- 1 \overline{AC} and \overline{BD} are diameters of circle F. What is the $m\widehat{ACD}$? (SOL G.11a)

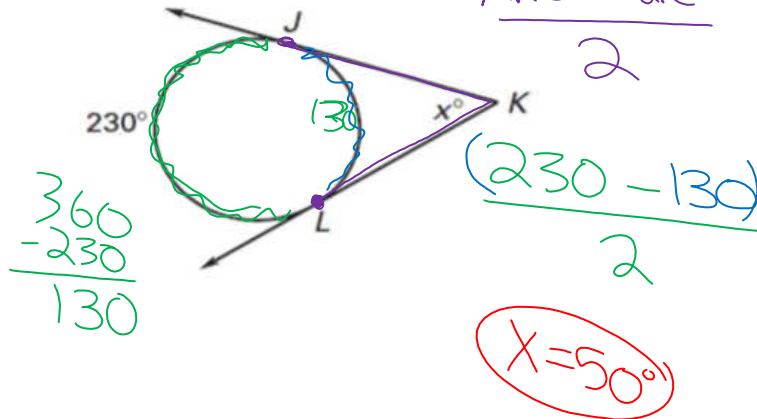
A 70°
 B 110°
 C 180°
 D 250°

Handwritten calculations:
 $360 - 110 = 250^\circ$
 $70 + 50 = 120$
 $180 - 120 = 60$
 $60 + 60 = 120$
 $120 + 130 = 250$

CODE YELLOW

- 2 Given the figure below, what is the $m\angle JKL$?
(SOL G.11a)

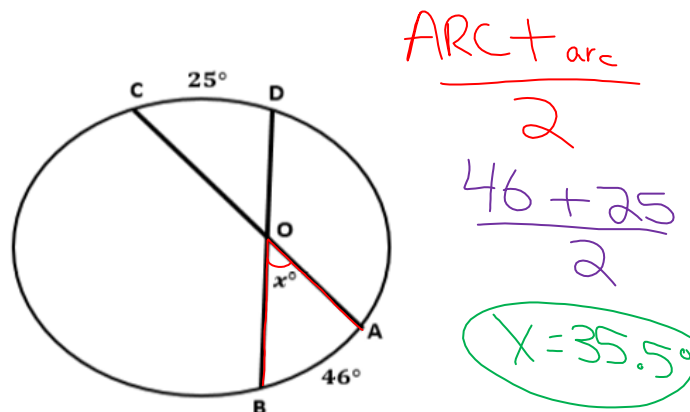
- F** 50°
- G** 65°
- H** 80°
- J** 115°



CODE YELLOW

- 3 Given the figure, what is the $m\angle AOB$?
(SOL G.11a)

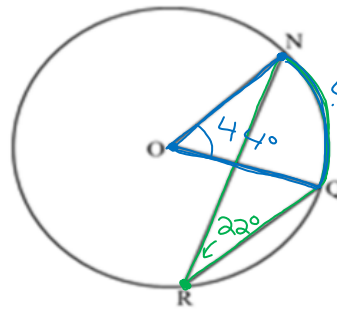
- F** 21.0°
- G** 35.5°
- H** 58.5°
- J** 71.0°



CODE YELLOW

- 4 In circle O, the $m\angle NRQ = 22^\circ$. What is the $m\angle NOQ$? (SOL G.11a)

- F 22°
G 44°
 H 66°
 J 90°



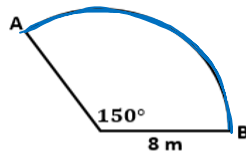
$$\frac{\text{Arc}}{2} = \cancel{X}$$

$$\frac{(2) \text{ Arc}}{2} = 22(2)$$

$$\text{Arc} = 44$$

CODE YELLOW

- 5 A sprinkler rotates back and forth from point A to point B. The water reaches 8 meters from the base of the sprinkler.



What is the length of the arc AB rounded to the nearest tenth of a meter? Use 3.14 for π . (SOL G.11c)

- A 20.9 m**
 B 50.2 m
 C 83.7 m
 D 201.0 m

$$\frac{150}{360} \times \frac{X}{2(3.14)8}$$

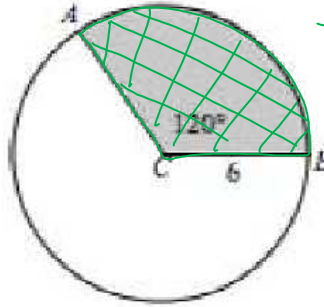
$$\frac{360x}{360} = \frac{150 \times 2 \times 3.14 \times 8}{360}$$

$$x = 20.9\text{ m}$$

CODE YELLOW

- 6 In circle C, $\overline{BC} = 6$ and $m\angle ACB = 120^\circ$. What is the area of the shaded sector?
(SOL G.11c)

- F 4π sq. units
G 6π sq. units
H 9π sq. units
J 12π sq. units



$$\frac{120}{360} \times \frac{x}{\pi 36}$$

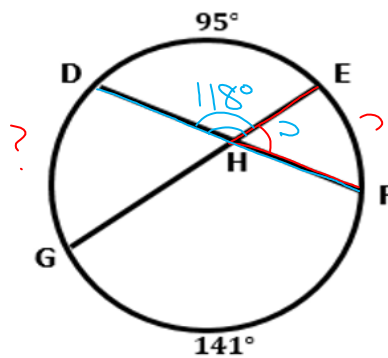
$$\frac{360x}{360} = \frac{120 \times 36}{360} (\pi)$$

$$x = 12\pi$$

CODE YELLOW

- 7 Given the circle below, what is the measure of $m\angle EHF$? (SOL G.11a)

- A 46°
B 62°
C 85°
D 118°



$$\frac{141 + 95}{2} = 118^\circ$$

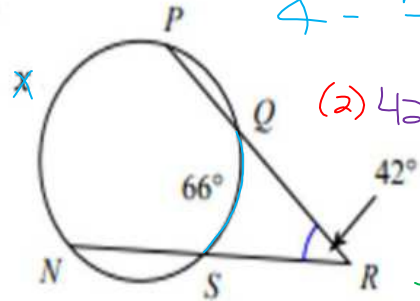
$$\frac{180}{2} = 90$$

$$90 - 28 = 62^\circ$$

CODE YELLOW

- 8** In the circle below, $m\angle NRP = 42^\circ$ and $m\widehat{QS} = 66^\circ$. What is the $m\widehat{NP}$?
(SOL G.11a)

- F** 24°
G 84°
H 108°
J 150°



$$x = \frac{\text{ARC} - \text{arc}}{2}$$

$$(2) 42 = \frac{x - 66}{2}$$

$$84 = x - 66$$

$$+66 \quad +66$$

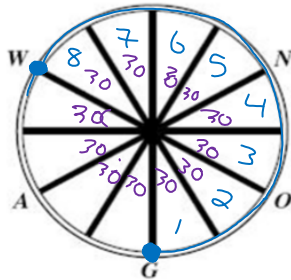
$$150 = x$$

CODE YELLOW

- 9** The spokes on a wagon wheel form twelve congruent central angles. (SOL G.11b)

$$\frac{360}{12}$$

$$30^\circ$$



$$8 \times 30$$

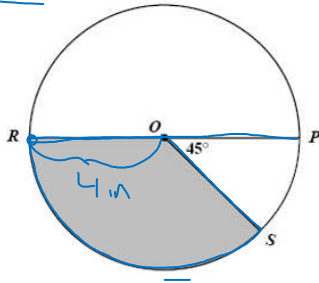
- What is the degree measure of \widehat{GOW} ?
(SOL G.11b)

$$240^\circ$$

CODE YELLOW

- 10** A circle for a game spinner is divided into 3 regions as shown. \overline{RP} is a diameter. What is the area of the shaded sector ROS if $RP = 8 \text{ in}$ and $m\angle POS = 45^\circ$? (**SOL G.11c**)

$$\begin{array}{r} 180 \\ - 45 \\ \hline 135 \end{array}$$



$$\frac{135}{360} \times \frac{\pi \times 16}{4}$$

$$\frac{360x}{360} = \frac{135 \times \pi \times 16}{360}$$

$$x = 18.8 \text{ in}^2$$

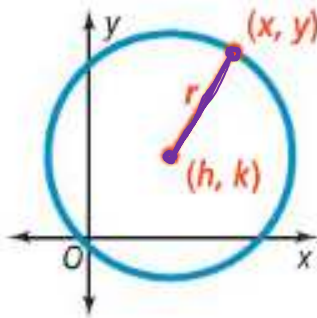
75.4 in ²	6.3 in
18.8 in	25.1 in ²
6.3 in ²	9.4 in
3.1 in	18.8 in ²

CODE YELLOW

Equation of a Circle:

The equation of a circle with center (h, k) and radius r is

$$(x - h)^2 + (y - k)^2 = r^2$$



CODE YELLOW

$$(x - h)^2 + (y - k)^2 = r^2$$

$$r^2 = (x - h)^2 + (y - k)^2$$

$$r = \sqrt{(x - h)^2 + (y - k)^2}$$

$$r = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

CODE YELLOW

Writing the equation of a circle:

* Radius - 9

* Center - (3, -4)

$$(x - h)^2 + (y - k)^2 = r^2$$

$$(x - 3)^2 + (y + 4)^2 = 81$$

CODE YELLOW

Writing the equation of a circle:

Radius - 5

Center - (0, 5)

$$(x - h)^2 + (y - k)^2 = r^2$$

$$x^2 + (y - 5)^2 = 25$$

CODE YELLOW

Writing the equation of a circle:

* Radius - $\sqrt{8}$

* Center - (0.5, -0.5)

$$(x - h)^2 + (y - k)^2 = r^2$$

$$(x - 0.5)^2 + (y + 0.5)^2 = 8$$

CODE YELLOW

Finding the radius and center:

$$(x - h)^2 + (y - k)^2 = r^2$$

$$(x - 3)^2 + (y + 2)^2 = 144$$

$$r = 12$$

$$C = (3, -2)$$

CODE YELLOW

Finding the radius and center:

$$(x - h)^2 + (y - k)^2 = r^2$$

$$(x - 3.5)^2 + (y + 3.5)^2 = 12$$

$$r = \sqrt{12}$$

$$C = (3.5, -3.5)$$

CODE GREEN

What is the standard equation of each circle?

1. center $(0, 0)$; $r = 4$ $x^2 + y^2 = 16$

2. center $(1, -1)$; $r = \sqrt{5}$ $(x-1)^2 + (y+1)^2 = 5$

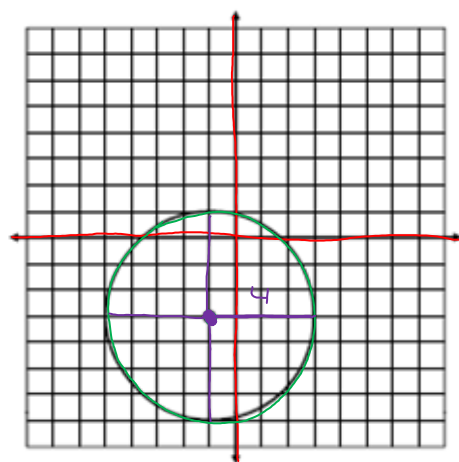
What is the center and radius of each circle?

3. $(x - 8)^2 + y^2 = 9$ $C = (8, 0)$ $r = 3$

4. $(x + 2)^2 + (y - 4)^2 = 7$ $C = (-2, 4)$ $r = \sqrt{7}$

CODE BLUE

Write an equation to represent the circle shown on the graph below.



$r = 4$
 $C = (-1, -3)$

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

CODE RED – EXIT TICKET

Write a paragraph (3-5 sentences) summarizing what you learned in this lesson.

Complete your EXIT TICKET silently and independently at your seat. Remember to do your best and TRY every problem.

When you are finished, raise your hand and Coach Riddick will come around to collect it.