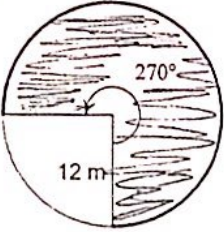
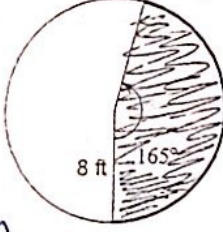


G6a: Check-in Quiz

Level: Find the arc length AND sector area of the shaded region.

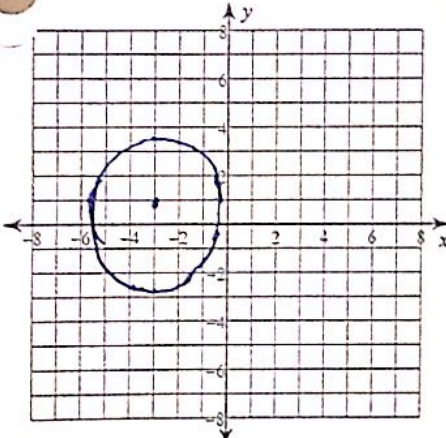
1)   $A.L. = \frac{\theta}{360} \cdot 2 \cdot \pi \cdot r$   
 $= \frac{270}{360} \cdot 2 \cdot \pi \cdot 12m$   
 $= 18\pi m \approx 56.55 m$

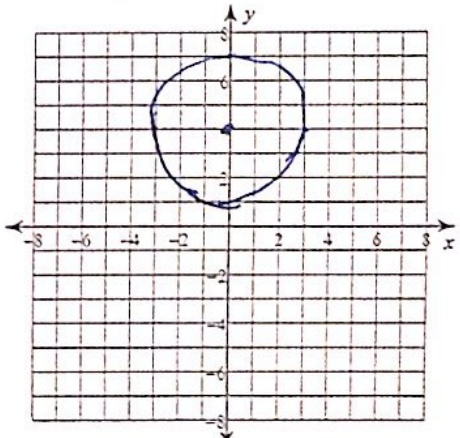
2)   $A.L. = \frac{165}{360} \cdot 2 \cdot \pi \cdot 8ft$   
 $= \frac{22}{3} \cdot \pi ft$   
 $\approx 23.04 ft$

$S.A. = \frac{\theta}{360} \cdot \pi \cdot r^2$   
 $= \frac{270}{360} \cdot \pi (12m)^2$   
 $= 108\pi m^2 \approx 339.29 m^2$

$S.A. = \frac{165}{360} \cdot \pi (8ft)^2$   
 $= \frac{88}{3} \cdot \pi ft^2 \approx 92.15 ft^2$

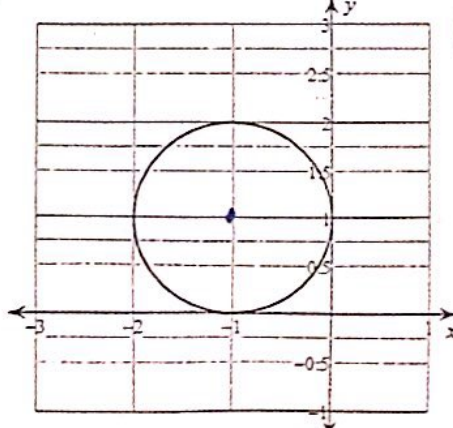
Identify the center and radius of each. Then sketch the graph.

3)  $(x+3)^2 + (y-1)^2 = 8$   
 Center:  $(-3, 1)$   
 $r = \sqrt{8}$   


4)  $x^2 + (y-4)^2 = 9$   
 Center:  $(0, 4)$   
 $r = 3$   


Use the information provided to write the equation of each circle.

5) Center:  $(-6, -12)$   
 Radius: 3  
 $(x+6)^2 + (y+12)^2 = 9$

6)   $(x+1)^2 + (y+1)^2 = 4$

**B Level:**

Find the diameter of the circle with the given area. Use correct units and round to 2 decimals.

7) area = 78.5 mi<sup>2</sup>

$$A = \pi r^2$$

$$\frac{78.5 \text{ mi}^2}{\pi} = \frac{\pi r^2}{\pi}$$

$$24.99 \text{ mi}^2 = r^2$$

$$5.00 \text{ mi} = r$$

$$d = 2(5 \text{ mi})$$

$$= 10 \text{ mi}$$

Find the area of the circle with the given info. Use correct units and round to 2 decimals.

8) circumference = 71.6 ft

$$C = 2 \cdot \pi \cdot r$$

$$\frac{71.6 \text{ ft}}{(2\pi)} = \frac{2 \cdot \pi \cdot r}{2\pi}$$

$$11.40 \text{ ft} = r$$

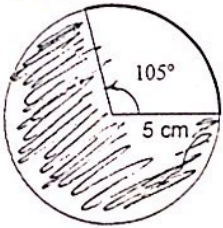
$$A = \pi r^2$$

$$A = \pi (11.40 \text{ ft})^2$$

$$A \approx 407.96 \text{ ft}^2$$

Find the arc length and area for each shaded sector. Use appropriate units and show your answer in exact and rounded forms.

9)  $360 - 105 = 255^\circ$



$$A.L. = \frac{255}{360} \cdot 2 \cdot \pi \cdot 5 \text{ cm}$$

$$= \frac{85}{12} \pi \text{ cm}$$

$$S.A. = \frac{255}{360} \cdot \pi (5 \text{ cm})^2$$

$$= \frac{425}{24} \text{ cm}^2$$

10)  $360 - 60 = 300^\circ$

$$A.L. = \frac{300}{360} \cdot 2 \cdot \pi \cdot 17 \text{ ft}$$

$$= \frac{85}{3} \pi \text{ ft}$$

$$S.A. = \frac{300}{360} \cdot \pi (17 \text{ ft})^2$$

$$= \frac{1445}{6} \pi \text{ ft}^2$$

Use the information provided to write the equation of each circle.

11) Ends of a diameter: (9, -12) and (-1, -12)

$$(x-4)^2 + (y+12)^2 = 25$$

12) Center: (-15, 15)  
Point on Circle: (-11, 15)

$$(x+15)^2 + (y-15)^2 = 16$$

**Challenge problem:**

13) Write the following equation in standard (center-radius) form:

$$x^2 + 14x + y^2 - 4y = -17$$

$$(x+7)^2 + (y-2)^2 = 36$$