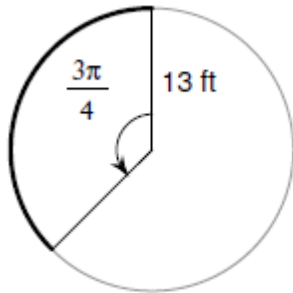


Precalculus BC PreAP/Dual Rev 2017  
§4.1A: Area of a Sector and Arc Length

Name: \_\_\_\_\_  
Date: \_\_\_\_\_ Period: \_\_\_\_\_

For these following questions, do not use any calculator.

1) Determine the Arc Length of a circle of the following.

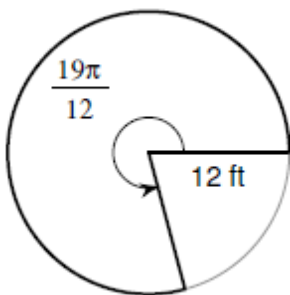


2) Determine the Arc Length of a circle with the given radius of  $r = 15$  inches and  $\theta = 120^\circ$ .

3) Determine  $\theta$  if the radius is 80 km and sector area is 150 km.

4) Determine the area of a sector with the given radius of  $r = 14$  cm. and  $\theta = \frac{3\pi}{2}$ .

5) Determine the area of a sector with the given radius of the following.



6) Determine the area of a sector with the given radius of  $r = 7$  miles. and  $\theta = 225^\circ$ .

7) Determine both the Arc Length and Area of a Sector when  $r = 12$  mm. and  $\theta = \frac{\pi}{4}$ .

**For these following questions below, you may use a scientific or graphing calculator. Round decimal answers to four places.**

8) Determine the Arc Length of a circle with the given radius of  $r = 11$  feet and  $\theta = 75^\circ$ .

9) Determine  $\theta$  with the given radius of  $r = 2.5$  ft and  $A = 12.2718 \text{ ft}^2$ .

10) A sprinkler on a golf green sprays water over 15 meters and rotates through an angle of  $\theta = 140^\circ$ . Draw a diagram that shows the region that the sprinkler can irrigate. Find the area of the region.

11) A car's rear windshield wiper rotates  $125^\circ$ . The total length of the wiper mechanism is 25 inches and wipes the windshield over 14 inches. Find the area covered by the wiper.

12) Is a degree or a radian the greater unit of measurement? Explain.