

Sector Area: $\left(\begin{matrix} \text{Central} \\ \text{Angle} \end{matrix} \right) \left(\frac{\text{Area}}{360^\circ} \right) \left\{ \begin{matrix} \text{Area of a circle} \\ r^2 \pi \end{matrix} \right\}$

Math 2

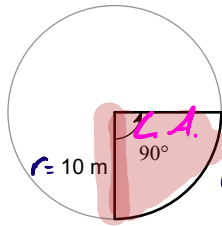
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Sector Area, Arc Length

Date _____ Period _____

Find the area of each sector.

1)



① Area

$$r^2 \pi = 10^2 \pi$$

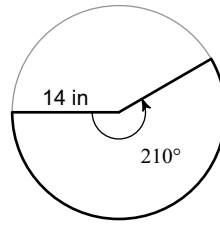
$$100 \pi$$

② Sector Area

$$90 \left(\frac{100 \pi}{360} \right) = \frac{9000 \pi}{360}$$

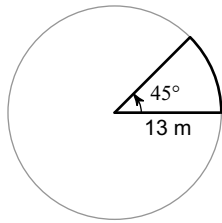
$$= 78.54 \text{ m}^2$$

2)



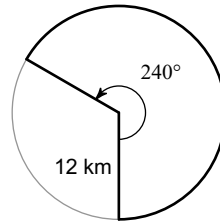
$$359.19 \text{ in}^2$$

3)



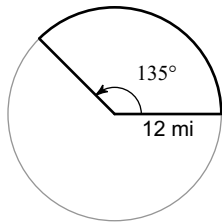
$$66.37 \text{ m}^2$$

4)



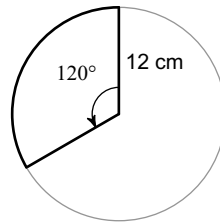
$$301.59 \text{ km}^2$$

5)



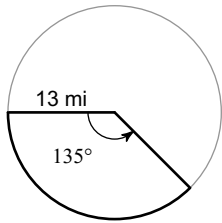
$$169.65 \text{ mi}^2$$

6)



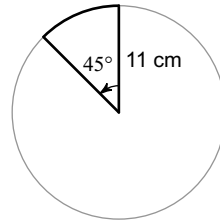
$$150.8 \text{ cm}^2$$

7)



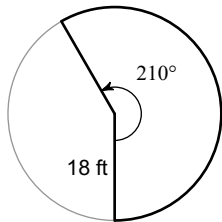
$$199.1 \text{ mi}^2$$

8)



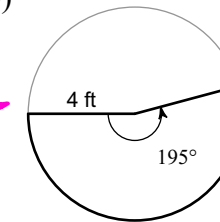
$$47.52 \text{ cm}^2$$

9)



$$593.76 \text{ ft}^2$$

10)

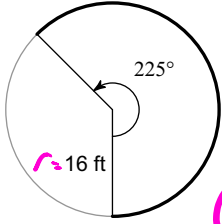


$$27.23 \text{ ft}^2$$

Arc Length: $\left(\frac{\text{Central Angle}}{\text{Angle}}\right) \left(\frac{\text{Cir}}{360}\right) \left\{ \text{Circumference } 2r\pi \right\}$

Find the length of each arc.

11)

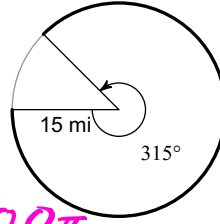


① Cir

$$2r\pi \rightarrow 2(16)\pi = 32\pi$$

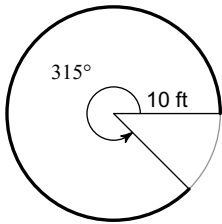
② $225 \left(\frac{32\pi}{360} \right) = \frac{7200\pi}{360}$
62.83 ft

12)



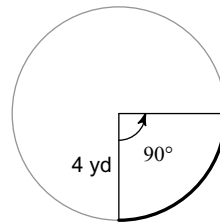
82.47 mi

13)



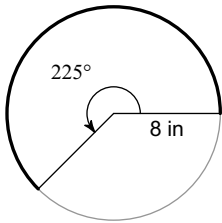
54.98 ft.

14)



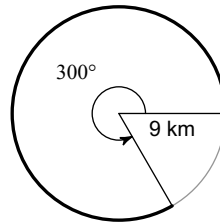
6.28 yd

15)



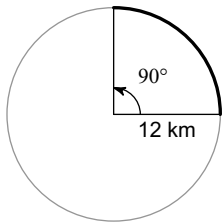
31.42 in

16)



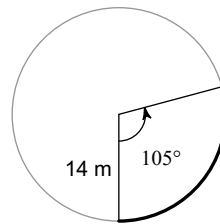
47.12 km

17)



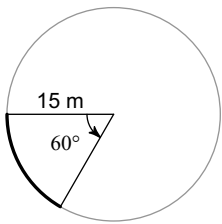
18.85 km

18)



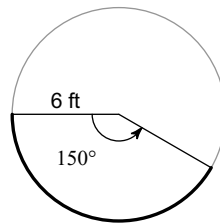
25.66 m

19)



15.71 m

20)



15.71 ft