Name_____ Date_____ Period_____

9.5 /9.6 Arc Length and Area Sector

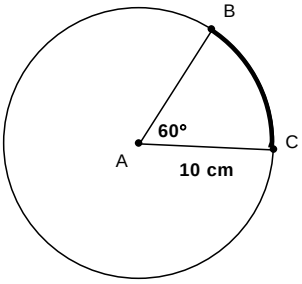
Find the degree measure of each angle expressed in radians and the radian measure of each angle expressed in degrees. (Express radian measures in terms of π.)

1. 30° **2.** 60° **3.** $\frac{5\pi}{6}$ **4.** $\frac{11\pi}{4}$

5. 135° **6.** $\frac{29\pi}{4}$ **7.** $\frac{17\pi}{6}$ **8.** 180°

Find the length of each arc. Round to the nearest thousandth.
$l = \frac{\pi\theta}{180} r$ (θ is measured in degrees.)

9.



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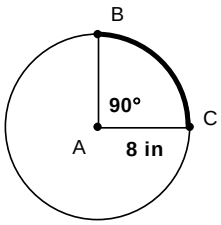

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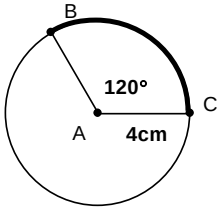

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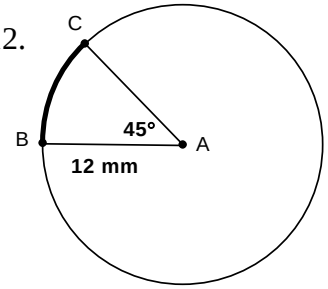

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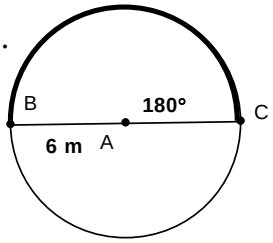

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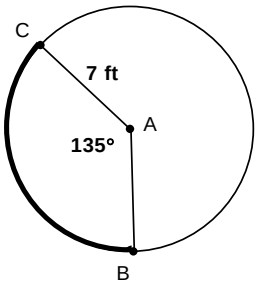
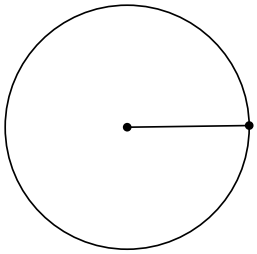
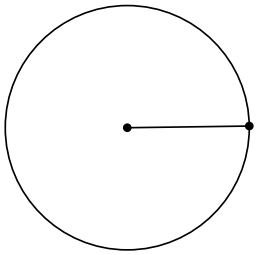


Draw a representation of each arc length, then find the arc length. Leave your answer in terms of π.

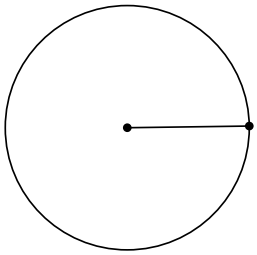
15. $\theta = \frac{\pi}{3}$ radius = 8ft



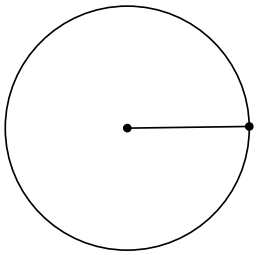
16. $\theta = \pi$ radius = 16 m



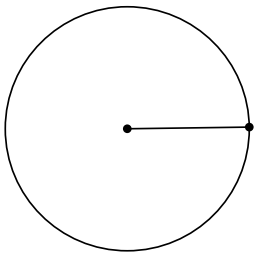
17. $\theta = \frac{2\pi}{3}$ radius = 3 mm



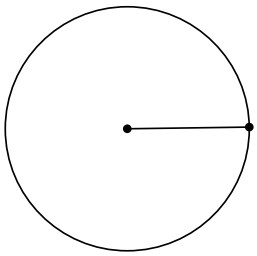
18. $\theta = \frac{\pi}{2}$ radius = 3cm



19. $\theta = \frac{\pi}{4}$ radius = 5 cm



20. $\theta = \frac{\pi}{6}$ radius = 5 cm



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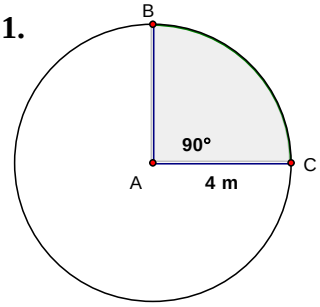
Find the area of a sector of a circle using degrees. Round to the nearest thousandth.

Use the formula: $A = \frac{\pi\theta}{360}r^2$ (θ is in degrees)

21.



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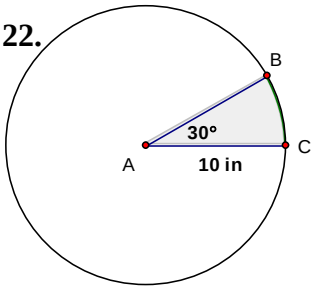

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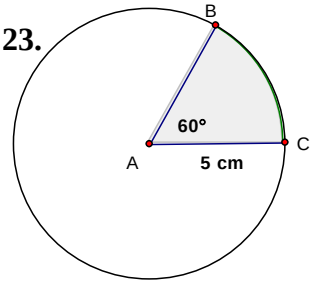

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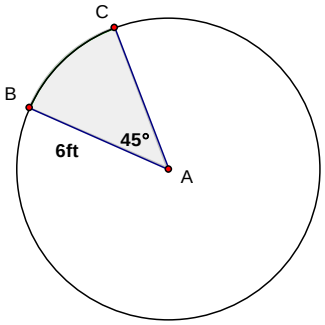

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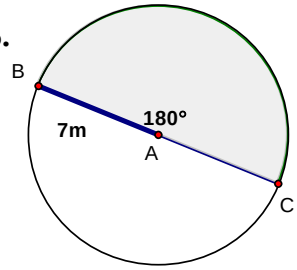

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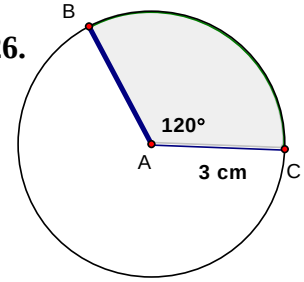
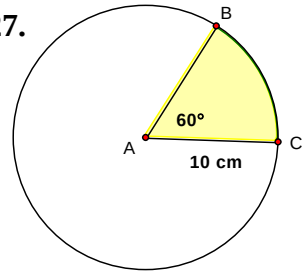


Change the degrees to radians then find the area of each sector using radians. Leave your answer in terms of π.

Use the formula: $A = \frac{1}{2}\theta r^2$ (θ is in radians)

27.



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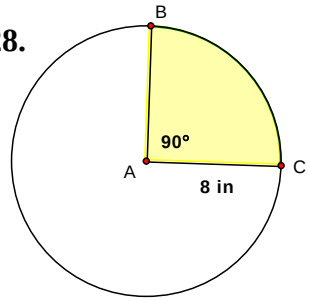

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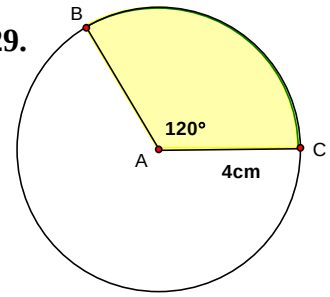

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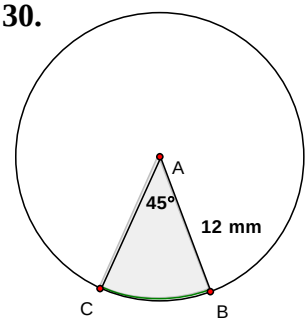

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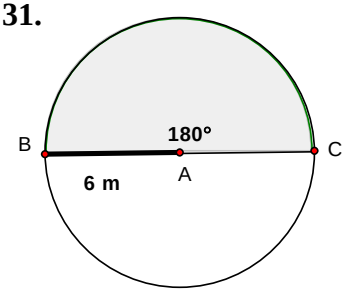

32.