



# Math on the Fly!



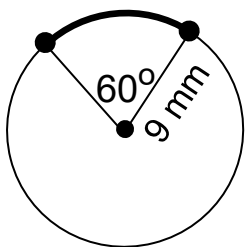
NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

## Arc Length

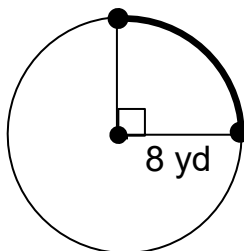
Find the length of each arc below.

You may give each answer in terms of pi or round the answer to two decimal places.

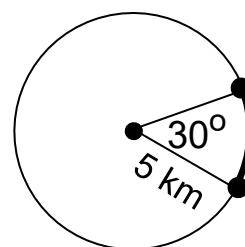
1.



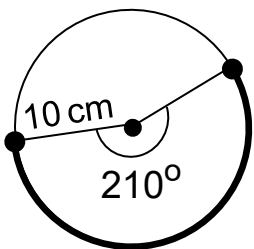
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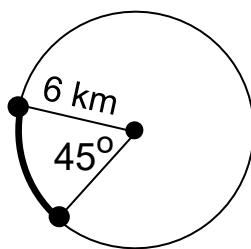
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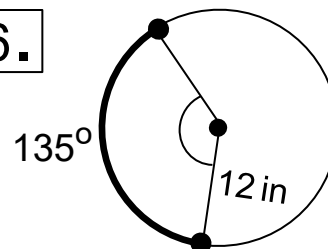
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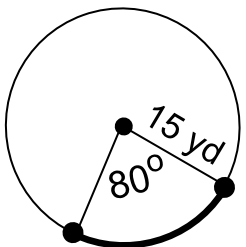
5.



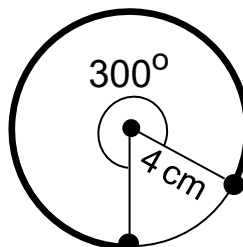
6.



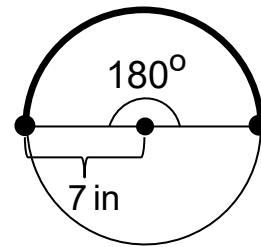
7.



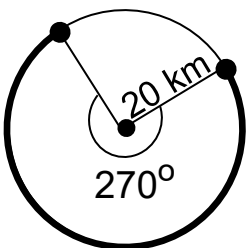
8.



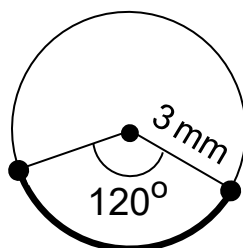
9.



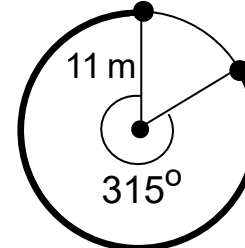
10.



11.



12.



## SOLUTIONS

$$\begin{aligned} 1. \quad L &= \frac{60}{360} \cdot (2 \cdot \pi \cdot 9) \\ &= 3\pi \text{ or } 9.42 \text{ mm} \end{aligned}$$

$$\begin{aligned} 2. \quad L &= \frac{90}{360} \cdot (2 \cdot \pi \cdot 8) \\ &= 4\pi \text{ or } 12.56 \text{ yd} \end{aligned}$$

$$\begin{aligned} 3. \quad L &= \frac{30}{360} \cdot (2 \cdot \pi \cdot 5) \\ &= \frac{5\pi}{6} \text{ or } 2.62 \text{ km} \end{aligned}$$

$$\begin{aligned} 4. \quad L &= \frac{210}{360} \cdot (2 \cdot \pi \cdot 10) \\ &= \frac{35\pi}{3} \text{ or } 36.63 \text{ cm} \end{aligned}$$

$$\begin{aligned} 5. \quad L &= \frac{45}{360} \cdot (2 \cdot \pi \cdot 6) \\ &= \frac{3\pi}{2} \text{ or } 4.71 \text{ km} \end{aligned}$$

$$\begin{aligned} 6. \quad L &= \frac{135}{360} \cdot (2 \cdot \pi \cdot 12) \\ &= 9\pi \text{ or } 28.26 \text{ in} \end{aligned}$$

$$\begin{aligned} 7. \quad L &= \frac{80}{360} \cdot (2 \cdot \pi \cdot 15) \\ &= \frac{20\pi}{3} \text{ or } 20.93 \text{ yd} \end{aligned}$$

$$\begin{aligned} 8. \quad L &= \frac{300}{360} \cdot (2 \cdot \pi \cdot 4) \\ &= \frac{20\pi}{3} \text{ or } 20.93 \text{ cm} \end{aligned}$$

$$\begin{aligned} 9. \quad L &= \frac{180}{360} \cdot (2 \cdot \pi \cdot 7) \\ &= 7\pi \text{ or } 21.98 \text{ in} \end{aligned}$$

$$\begin{aligned} 10. \quad L &= \frac{270}{360} \cdot (2 \cdot \pi \cdot 20) \\ &= 30\pi \text{ or } 94.2 \text{ km} \end{aligned}$$

$$\begin{aligned} 11. \quad L &= \frac{120}{360} \cdot (2 \cdot \pi \cdot 3) \\ &= 2\pi \text{ or } 6.28 \text{ mm} \end{aligned}$$

$$\begin{aligned} 12. \quad L &= \frac{315}{360} \cdot (2 \cdot \pi \cdot 11) \\ &= \frac{77\pi}{4} \text{ or } 60.45 \text{ m} \end{aligned}$$