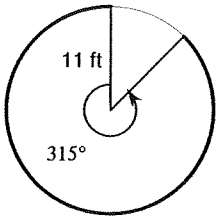
Kuta Software - Infinite Algebra 2 Name_____

Arc Length and Sector Area

Date_____ Period____

Find the length of each arc. Round your answers to the nearest tenth.

1)



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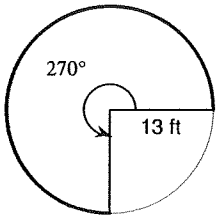

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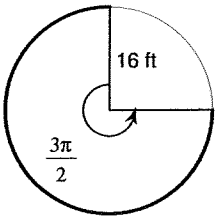

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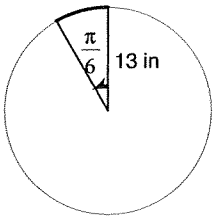


5) $r = 18$ cm, $\theta = 60°$

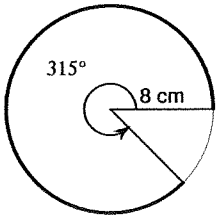
6) $r = 16$ m, $\theta = 75°$

7) $r = 9$ ft, $\theta = \frac{7\pi}{4}$

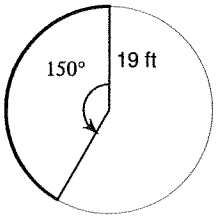
8) $r = 14$ ft, $\theta = \frac{19\pi}{12}$

Find the length of each arc. Do not round.

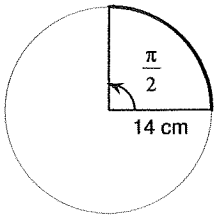
9)



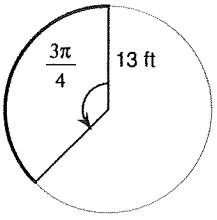
10)



11)



12)



13. A clock has a second hand with a length of 15cm. What is the angular and linear velocity of the end of the second hand?

14. A watch has a second hand with a length of 0.85cm. What is the angular and linear velocity of the end of the second hand?

15. Big Ben in London has a minute hand with a length of 4.2m. What is the angular and linear velocity of the end of the minute hand?

16. The circular blade on a power saw has a diameter of 30cm. The blade rotates at 2400 revolutions per minute.

a. Find the Angular velocity in radians per second.

b. Find the linear velocity of the saw's teeth in meters per second.

Extra Credit:. A car is moving at the rate of 50 mph, and the diameter of its wheels is 2.5 feet.

a. Find the revolutions per minute of the rotating wheels.

b. Find the angular velocity of the wheels in radians per minute.