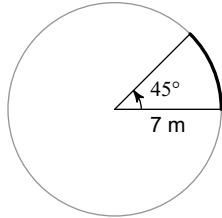


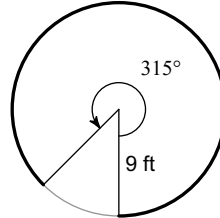
Unit 3 Circles

Find the length of each arc. Provide an exact answer and an answer rounded to the nearest hundredth.

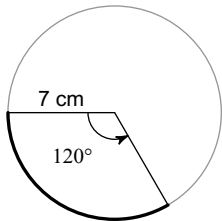
1)



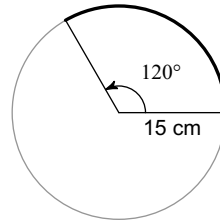
2)



3)



4)



5) $r = 16 \text{ m}, \theta = 255^\circ$

6) $r = 9 \text{ m}, \theta = 120^\circ$

7) $r = 13 \text{ ft}, \theta = 195^\circ$

8) $r = 17 \text{ mi}, \theta = 165^\circ$

Answer the following questions.

9) The arc length for 120° section of a circle is 12π . What is the radius of the circle?

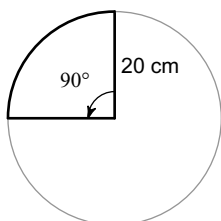
10) The circumference of a circle is 18π . What is the arc length of a section that is 45° ?

11) A circle has radius 8 m. What is the measure of the central angle that forms an arc length of $8\pi/9$?

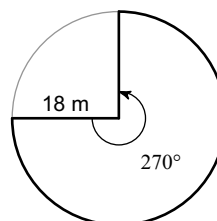
12) A central angle of 240° forms an arc that is $12\pi \text{ ft.}$ long. What is the length of the diameter?

Find the area of each sector. Provide an exact answer and an answer rounded to the nearest hundredth.

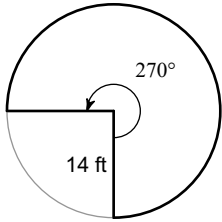
13)



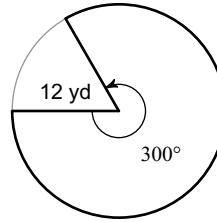
14)



15)



16)



17) $r = 8\text{ cm}$, $\theta = 30^\circ$

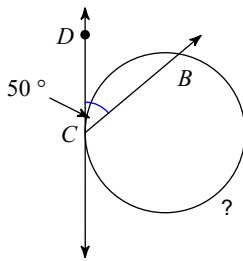
18) $r = 15\text{ ft}$, $\theta = 60^\circ$

19) $r = 7\text{ km}$, $\theta = 195^\circ$

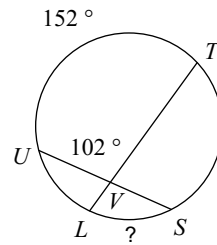
20) $r = 18\text{ m}$, $\theta = 60^\circ$

Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.

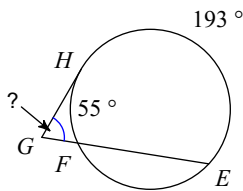
21)



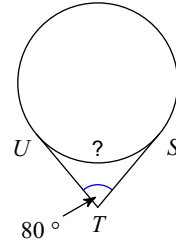
22)



23)

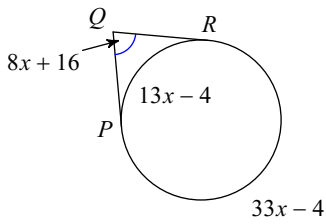


24)

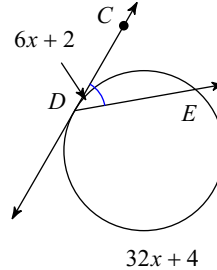


Solve for x. Assume that lines which appear tangent are tangent.

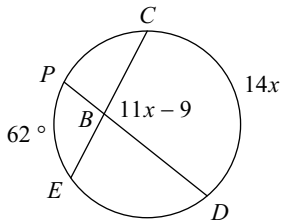
25)



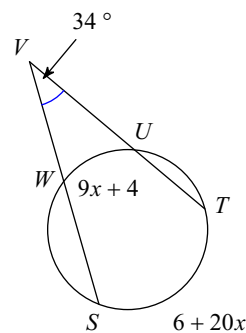
26)



27)



28)



Answers to Unit 3 Circles

- | | | | |
|---------------------------------------|---------------------------------------|---|------------------------------|
| 1) $\frac{7\pi}{4}$ m | 2) $\frac{63\pi}{4}$ ft | 3) $\frac{14\pi}{3}$ cm | 4) 10π cm |
| 5) $\frac{68\pi}{3}$ m | 6) 6π m | 7) $\frac{169\pi}{12}$ ft | 8) $\frac{187\pi}{12}$ mi |
| 9) | 10) | 11) | 12) |
| 13) 100π cm ² | 14) 243π m ² | 15) 147π ft ² | 16) 120π yd ² |
| 17) $\frac{16\pi}{3}$ cm ² | 18) $\frac{75\pi}{2}$ ft ² | 19) $\frac{637\pi}{24}$ km ² | 20) 54π m ² |
| 21) 260° | 22) 52° | 23) 69° | 24) 100° |
| 25) 8 | 26) 8 | 27) 10 | 28) 6 |