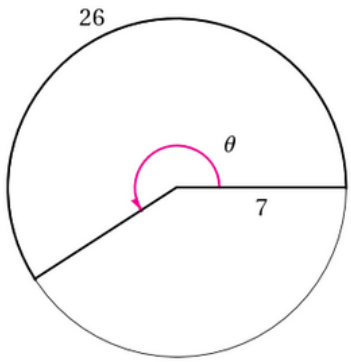
28. –/1 points LarTrig9 1.1.055.

Use the given arc length and radius to find the angle θ (in radians).

θ = _____ radians



$s = r\theta$

$26 = 7\theta$

$\theta = \frac{26}{7}$

29. –/1 points LarTrig9 1.1.054.

Find the radian measure of the central angle of a circle of radius r that intercepts an arc of length s.

Radius r	Arc Length s
11 feet	8 feet

See #28

$s = r\theta$

$8 = 11\theta \Rightarrow \theta = \frac{8}{11}$ radians (or just $\frac{8}{11} = \theta$)

30. –/1 points LarTrig9 1.1.053.MI.

Find the radian measure of the central angle of a circle of radius r that intercepts an arc of length s.

Radius r	Arc Length s
40 kilometers	85 kilometers

See #28

$s = r\theta$

$85 = 40\theta$

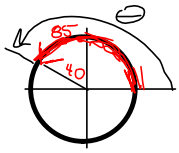
$\Rightarrow \theta = \frac{85}{40}$

30. –/1 points LarTrig9 1.1.053.MI.

Find the radian measure of the central angle of a circle of radius r that intercepts an arc of length s.

Radius r	Arc Length s
40 kilometers	85 kilometers

See #28



$s = r\theta \rightarrow 85 = 40\theta \Rightarrow \theta = \frac{85}{40} = \frac{17}{8} = \theta$

31. –/1 points LarTrig9 1.1.052.

Find the length of the arc on a circle of radius r intercepted by a central angle θ. (Round your answer to two decimal places.)

Radius r	Central Angle θ
9 meters	150°

$s = r\theta = (9\text{ m})(150^\circ)\left(\frac{\pi}{180^\circ}\right) = \frac{15\pi}{2}$ m

$\frac{150}{180} = \frac{15}{2}$

≈ 23.56 m $\approx s$

15π/2
23.5619449

32. –/1 points LarTrig9 1.1.051.

Find the length of the arc on a circle of radius r intercepted by a central angle θ. (Round your answer to two decimal places.)

Radius r	Central Angle θ
17 inches	240°

See #31

$s = r\theta = (17\text{ in})(240^\circ)\left(\frac{\pi}{180^\circ}\right) = \frac{(17)(24\pi)}{18} = \frac{17(4)}{3}\pi = \frac{68\pi}{3}$ in

68π/3
71.20943348

≈ 71.20943348 in

≈ 71.21 in

33. –/1 points LarTrig9 1.1.045.

Convert the angle measure from radians to degrees. Round to three decimal places.

-3.6π

$-3.6\pi = (-3.6)(\pi)\left(\frac{180^\circ}{\pi}\right) = (-3.6)(180^\circ) = -648^\circ$

$= -648.000^\circ$

34. –/1 points LarTrig9 1.1.044.

Convert the angle measure from radians to degrees. Round to three decimal places.

$17\pi/8$

See #34

$\left(\frac{17\pi}{8}\right)\left(\frac{180^\circ}{\pi}\right) = \frac{(17)(180)^{\circ}}{8}$

$= \frac{(17)(90)}{4} = \frac{17(45)}{2} = 382.5^\circ$

17*45/2
382.5

35. –/1 points LarTrig9 1.1.041.

Convert the angle measure from degrees to radians. Round to three decimal places.

0.76°

$(.76^\circ)\left(\frac{\pi}{180^\circ}\right) = \left(\frac{76}{100}\right)\left(\frac{\pi}{180}\right)$

$= \frac{19\pi}{(100)(45)} \approx .013264502 3 \approx .013$

36. –/2 points LarTrig9 1.1.038.

Rewrite each angle in degree measure. (Do not use a calculator.)

(a) $-\frac{11\pi}{12}$ °

$\left(-\frac{11\pi}{12}\right)\left(\frac{180^\circ}{\pi}\right) = -\frac{11 \cdot 15}{1}{}^\circ = -165^\circ$

(b) $\frac{7\pi}{4}$ °

$\frac{7\pi}{4} = \left(\frac{7\pi}{4}, \frac{180^\circ}{\pi}\right) = 7 \cdot 45^\circ$

$= 315^\circ$

345
7
315

37. –/2 points LarTrig9 1.1.037.

Rewrite each angle in degree measure. (Do not use a calculator.)

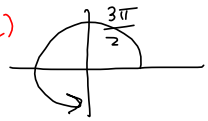
(a) $\frac{3\pi}{2}$ ____ °

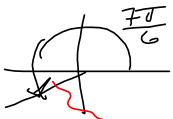
See #36

$\left(\frac{3\pi}{2}\right)\left(\frac{180^\circ}{\pi}\right) = 270^\circ$

(b) $\frac{7\pi}{6}$ ____ °

$\left(\frac{7\pi}{6}\right)\left(\frac{180^\circ}{\pi}\right) = 210^\circ$

(a) 

(b) 

38. –/2 points LarTrig9 1.1.036.

Rewrite each angle in radian measure as a multiple of π. (Do not use a calculator.)

(a) −30° ____ radians

$(-30^\circ)\left(\frac{\pi}{180^\circ}\right) = -\frac{\pi}{6}$

(b) 72° ____ radians

$(72^\circ)\left(\frac{\pi}{180^\circ}\right) = \frac{2\pi}{5}$

2 | 6 | 18 | 36 | 72 | 180 | 90 | 45 | 15 | 5 | 3 — Really?

39. –/2 points LarTrig9 1.1.035.

Rewrite each angle in radian measure as a multiple of π. (Do not use a calculator.)

(a) 60° ____ radians

See #38

$(60^\circ)\left(\frac{\pi}{180^\circ}\right) = \frac{\pi}{3}$

(b) −20° ____ radians

$(-20^\circ)\left(\frac{\pi}{180^\circ}\right) = -\frac{\pi}{9}$