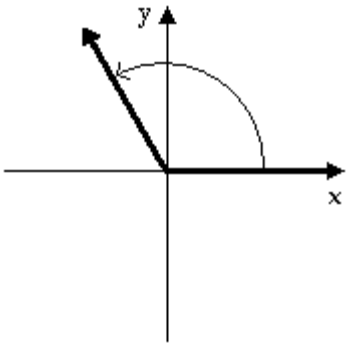
Worksheet section 5.1

Name_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Determine the degree measure of the given angle.

1) 

1) _____

Convert the angle to decimal degrees and round to the nearest hundredth of a degree.

2) –221°16'40'' 2) _____

Convert the angle to degrees–minutes–seconds. Round to the nearest whole number of seconds.

3) 331.52° 3) _____

Convert the degree measure to radian measure. Give the exact answer.

4) –670° 4) _____

5) 1440° 5) _____

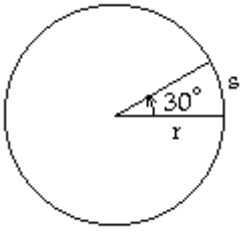
Convert the radian measure to degree measure. Use the value of π found on a calculator and round answers to two decimal places.

6) $-\frac{\pi}{5}$ 6) _____

7) 3.6553 7) _____

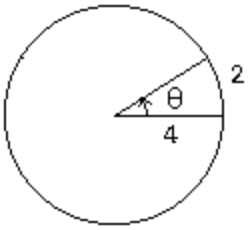
Solve the problem.

8) Use the formula $s = r\theta$ to determine the value of s in the figure. Round to two decimal places, if necessary. 8) _____



r = 8 in.

9) Use the figure below to determine the radian measure of angle θ. Round to two decimal places, if necessary. 9) _____



10) A pulley with a diameter of 30 inches is driven by a belt which is moving 865 ft/min. To the nearest unit, how many revolutions per minute are made by the pulley? 10) _____

11) Find the distance in kilometers between the cities whose latitudes are given. Assume that the cities are on a north–south line and that the radius of the earth is 6400 km. City E, 62°N and city F, 17°S 11) _____

12) A bicycle wheel rotates 76 times in 1 minute. Through how many degrees does a point on the tip of the wheel move in 7 seconds? 12) _____

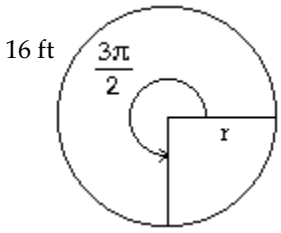
13) Find the length of the arc intercepted by a central angle of $\frac{7\pi}{9}$ in a circle of radius 7 cm. 13) _____

Round to two decimal places.

14) A pulley of radius 11 cm rotates 11 times in 64 sec. Find the angular velocity of the pulley. 14) _____

15) A pulley rotates through 80° in one minute. How many rotations does the pulley make in an hour? 15) _____

16) Use the formula $s = r\theta$ to determine the value of r in the figure. Round to two decimal places. 16) _____



1) 120°
2) −221.28°
3) 331°31'13''
4) $-\frac{67\pi}{18}$
5) 8π
6) −36°
7) 209.43°
8) 4.19 in.
9) 0.5 radians
10) 110 rpm
11) 8824 km
12) 3192°
13) 17.1 cm
14) $\frac{11\pi}{32}$ radians/sec
15) 13.3 rotations
16) 3.4 ft