

**WORKSHEET/3.3-3.4****Find the exact circular function value.**

1)  $\cos \frac{-2\pi}{3}$

2)  $\sin \frac{5\pi}{3}$

3)  $\tan \frac{7\pi}{6}$

4)  $\sec \frac{3\pi}{4}$

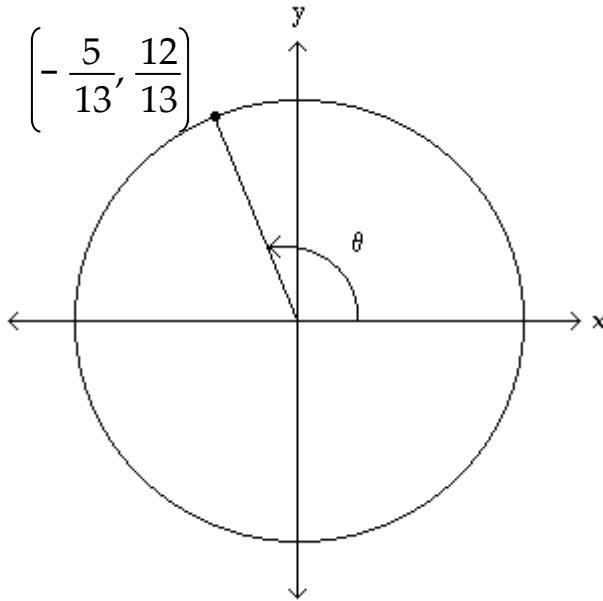
**Use a table or a calculator to evaluate the function.**

5)  $\csc 0.2142$

6)  $\cos 0.2806$

The figure shows an angle  $\theta$  in standard position with its terminal side intersecting the unit circle. Evaluate the indicated circular function value of  $\theta$ .

7) Find  $\sin \theta$ .



Find the value of  $s$  in the interval  $[0, \pi/2]$  that makes the statement true.

8)  $\cos s = 0.41296709$

9)  $\tan s = 5.40368606$

10)  $\cot s = 7.25754565$

Find the exact value of  $s$  in the given interval that has the given circular function value.

11)  $\left[\frac{\pi}{2}, \pi\right]; \sin s = \frac{\sqrt{2}}{2}$

$$12) \left[ \frac{\pi}{2}, \pi \right]; \cos s = -\frac{\sqrt{3}}{2}$$

$$13) \left[ \pi, \frac{3\pi}{2} \right]; \sin s = -\frac{\sqrt{3}}{2}$$

$$14) \left[ \frac{3\pi}{2}, 2\pi \right]; \tan s = -\frac{\sqrt{3}}{3}$$

$$15) \left[ \frac{3\pi}{2}, 2\pi \right]; \cos s = \frac{1}{2}$$

$$16) \left[ \pi, \frac{3\pi}{2} \right]; \tan s = 1$$

Use the formula  $\omega = \frac{\theta}{t}$  to find the value of the missing variable.

$$17) \omega = \frac{\pi}{10} \text{ radian per min, } t = 13 \text{ min}$$

$$18) \omega = 1.6123 \text{ radians per min, } \theta = 15.05 \text{ radians}$$

**Use the formula  $v = r\omega$  to find the value of the missing variable.**

19)  $r = 2$  cm,  $\omega = \frac{\pi}{5}$  radian per sec

**Use the formula  $s = r\omega t$  to find the value of the missing variable.**

20)  $r = 2$  cm,  $\omega = \frac{\pi}{3}$  radian per sec,  $t = 16$  sec

**Solve the problem.**

21) Find  $\omega$  for the minute hand of a clock.

22) Find  $v$  for the tip of the hour hand of a clock, if the hand is 11 cm long.

- 23) A wheel is rotating at 3 radians/sec, and the wheel has a 54-inch diameter. To the nearest foot, what is the speed of a point on the rim in ft/min?
- 24) Two pulleys of diameters 6 m and 3 m are connected by a belt. The larger pulley rotates 35 times per min. Find the angular speed of the smaller pulley.
- 25) The radius of the tires of a car is 18 inches, and they are revolving at the rate of 673 revolutions per minute. How fast is the car traveling in miles per hour?

## Answer Key

Testname: 3.3-3.4TRIGWS

1)  $-\frac{1}{2}$

2)  $-\frac{\sqrt{3}}{2}$

3)  $\frac{\sqrt{3}}{3}$

4)  $-\sqrt{2}$

5) 4.704

6) 0.9609

7)  $\frac{12}{13}$

8) 1.14508679

9) 1.38780765

10) 0.13692544

11)  $s = \frac{3\pi}{4}$

12)  $s = \frac{5\pi}{6}$

13)  $s = \frac{4\pi}{3}$

14)  $s = \frac{11\pi}{6}$

15)  $s = \frac{5\pi}{3}$

16)  $s = \frac{5\pi}{4}$

17)  $\frac{13\pi}{10}$  radians

18) 9.334 min

19)  $\frac{2\pi}{5}$  cm per sec

20)  $\frac{32\pi}{3}$  cm

21)  $\frac{\pi}{30}$  radians per minute

22)  $\frac{11\pi}{6}$  cm per hour

23) 405 ft/min

24)  $140\pi$  radians per min

25)  $\frac{2019}{88}\pi$  mph