

1.(1 pt) For each of the following angles, find the degree measure of the angle with the given radian measure:

- $\frac{1\pi}{6}$  \_\_\_\_\_
- $\frac{5\pi}{4}$  \_\_\_\_\_
- $\frac{2\pi}{3}$  \_\_\_\_\_
- $\frac{1\pi}{2}$  \_\_\_\_\_
- $5\pi$  \_\_\_\_\_

2.(1 pt) For each of the following angles, find the degree measure of the angle with the given radian measure:

- $-\frac{5\pi}{6}$  \_\_\_\_\_
- $-\frac{9\pi}{4}$  \_\_\_\_\_
- $-\frac{1\pi}{3}$  \_\_\_\_\_
- $\frac{7\pi}{2}$  \_\_\_\_\_
- $5\pi$  \_\_\_\_\_

3.(1 pt) For each of the following angles, find the radian measure of the angle with the given degree measure (you can enter  $\pi$  as 'pi' in your answers):

- 280 \_\_\_\_\_
- 90 \_\_\_\_\_
- 340 \_\_\_\_\_
- 380 \_\_\_\_\_
- 120 \_\_\_\_\_

4.(1 pt) For each of the following angles (in radian measure), find the sin of the angle (your answer cannot contain trig functions, it must be an arithmetic expression or number):

- $\frac{\pi}{6}$  \_\_\_\_\_
- $\frac{\pi}{4}$  \_\_\_\_\_
- $\frac{\pi}{3}$  \_\_\_\_\_
- $\frac{\pi}{2}$  \_\_\_\_\_
- $\pi$  \_\_\_\_\_
- $2\pi$  \_\_\_\_\_

5.(1 pt) For each of the following angles (in radian measure), find the cos of the angle (your answer cannot contain trig functions, it must be an arithmetic expression or number):

- $\frac{\pi}{6}$  \_\_\_\_\_
- $\frac{\pi}{4}$  \_\_\_\_\_
- $\frac{\pi}{3}$  \_\_\_\_\_
- $\frac{\pi}{2}$  \_\_\_\_\_
- $\pi$  \_\_\_\_\_
- $2\pi$  \_\_\_\_\_

6.(1 pt) Convert  $\frac{18}{15}\pi$  to degrees:

Convert  $-284^\circ$  to radians:

$\pi^*$  \_\_\_\_\_

7.(1 pt) Evaluate the following expressions

- $\sin(-\frac{\pi}{2})$  \_\_\_\_\_
- $\cos(-\frac{\pi}{3})$  \_\_\_\_\_
- $\tan(-\frac{\pi}{4})$  \_\_\_\_\_
- $\cot(\frac{3\pi}{4})$  \_\_\_\_\_

- $\sec(-\frac{\pi}{3})$  \_\_\_\_\_
- $\csc(-\frac{2\pi}{3})$  \_\_\_\_\_

8.(1 pt) If  $\theta = \frac{-7\pi}{4}$ , then

- $\sin(\theta)$  equals \_\_\_\_\_
- $\cos(\theta)$  equals \_\_\_\_\_
- $\tan(\theta)$  equals \_\_\_\_\_
- $\sec(\theta)$  equals \_\_\_\_\_

9.(1 pt) If  $\theta = \frac{-9\pi}{4}$ , then

- $\sin(\theta)$  equals \_\_\_\_\_
- $\cos(\theta)$  equals \_\_\_\_\_
- $\tan(\theta)$  equals \_\_\_\_\_
- $\sec(\theta)$  equals \_\_\_\_\_

10.(1 pt) If  $\theta = \frac{8\pi}{3}$ , then

- $\sin(\theta)$  equals \_\_\_\_\_
- $\cos(\theta)$  equals \_\_\_\_\_
- $\tan(\theta)$  equals \_\_\_\_\_
- $\sec(\theta)$  equals \_\_\_\_\_

11.(1 pt) If  $\theta = \frac{1\pi}{3}$  ( $\theta$  is measured in radians), then

- $\sin(\theta)$  equals \_\_\_\_\_
- $\cos(\theta)$  equals \_\_\_\_\_
- $\tan(\theta)$  equals \_\_\_\_\_
- $\sec(\theta)$  equals \_\_\_\_\_

12.(1 pt) If  $\theta = \frac{-11\pi}{6}$ , then

- $\sin(\theta)$  equals \_\_\_\_\_
- $\cos(\theta)$  equals \_\_\_\_\_
- $\tan(\theta)$  equals \_\_\_\_\_
- $\sec(\theta)$  equals \_\_\_\_\_

13.(1 pt) If  $\theta = \frac{-7\pi}{6}$ , then

- $\sin(\theta)$  equals \_\_\_\_\_
- $\cos(\theta)$  equals \_\_\_\_\_
- $\tan(\theta)$  equals \_\_\_\_\_
- $\sec(\theta)$  equals \_\_\_\_\_

14.(1 pt) If  $\sin(\theta) = \frac{24}{25}$ ,  $0 \leq \theta \leq \pi/2$ , then

- $\cos(\theta)$  equals \_\_\_\_\_
- $\tan(\theta)$  equals \_\_\_\_\_
- $\sec(\theta)$  equals \_\_\_\_\_

15.(1 pt) If  $\cos(\theta) = \frac{7}{25}$ ,  $0 \leq \theta \leq \pi/2$ , then

- $\sin(\theta)$  equals \_\_\_\_\_
- $\tan(\theta)$  equals \_\_\_\_\_
- $\sec(\theta)$  equals \_\_\_\_\_

16.(1 pt) If  $\tan(\theta) = \frac{8}{6}$ ,  $0 \leq \theta \leq \pi/2$ , then

- $\sin(\theta)$  equals \_\_\_\_\_
- $\cos(\theta)$  equals \_\_\_\_\_
- $\sec(\theta)$  equals \_\_\_\_\_

17.(1 pt) If  $\sec(\theta) = \frac{26}{10}$ ,  $0 \leq \theta \leq \pi/2$ , then

- $\sin(\theta)$  equals \_\_\_\_\_
- $\cos(\theta)$  equals \_\_\_\_\_

$\tan(\theta)$  equals \_\_\_\_\_

**18.**(1 pt)

If  $\sin(\theta) = -\frac{3}{8}$ , and  $\theta$  is in quadrant III, then find

- (a)  $\cos(\theta) =$  \_\_\_\_\_  
(b)  $\tan(\theta) =$  \_\_\_\_\_  
(c)  $\sec(\theta) =$  \_\_\_\_\_  
(d)  $\csc(\theta) =$  \_\_\_\_\_  
(e)  $\cot(\theta) =$  \_\_\_\_\_

**19.**(1 pt)

If  $\tan(\theta) = \frac{4}{2}$  and  $\sin(\theta) < 0$ , then find

- (a)  $\sin(\theta) =$  \_\_\_\_\_  
(b)  $\cos(\theta) =$  \_\_\_\_\_  
(c)  $\sec(\theta) =$  \_\_\_\_\_  
(d)  $\csc(\theta) =$  \_\_\_\_\_  
(e)  $\cot(\theta) =$  \_\_\_\_\_

**20.**(1 pt)

For each angle below, determine the quadrant in which the terminal side of the angle is found and find the corresponding reference angle.

[NOTE 1: Enter '1' for quadrant I, '2' for quadrant II, '3' for quadrant III, and '4' for quadrant IV.]

[NOTE 2: You can enter  $\pi$  as 'pi' in your answers.]

- (a)  $\theta = \frac{-4\pi}{3}$  is found in quadrant \_\_\_\_\_ and  $\bar{\theta} =$  \_\_\_\_\_  
(b)  $\theta = \frac{7\pi}{4}$  is found in quadrant \_\_\_\_\_ and  $\bar{\theta} =$  \_\_\_\_\_  
(c)  $\theta = \frac{7\pi}{6}$  is found in quadrant \_\_\_\_\_ and  $\bar{\theta} =$  \_\_\_\_\_  
(d)  $\theta = 7$  is found in quadrant \_\_\_\_\_ and  $\bar{\theta} =$  \_\_\_\_\_

**21.**(1 pt)

If  $\cos(\theta) = -\frac{5}{7}$  and  $\theta$  is in quadrant II, then find

- (a)  $\tan(\theta) \cot(\theta) =$  \_\_\_\_\_  
(b)  $\csc(\theta) \tan(\theta) =$  \_\_\_\_\_  
(c)  $\sin^2(\theta) + \cos^2(\theta) =$  \_\_\_\_\_

**22.**(1 pt) For  $0 < \theta < \pi/2$ , find the values of the trigonometric functions based on the given one (give your answers with

THREE DECIMAL PLACES or as expressions, e.g. you can enter 3/5).

If  $\cos(\theta) = \frac{7}{9}$  then

- $\sin(\theta) =$  \_\_\_\_\_  
 $\sec(\theta) =$  \_\_\_\_\_  
 $\csc(\theta) =$  \_\_\_\_\_  
 $\tan(\theta) =$  \_\_\_\_\_  
 $\cot(\theta) =$  \_\_\_\_\_

**23.**(1 pt) For  $0 < \theta < \pi/2$ , find the values of the trigonometric functions based on the given one (give your answers with THREE DECIMAL PLACES or as fractions, e.g. you can enter 3/5).

If  $\sec(\theta) = \frac{11}{8}$  then

- $\csc(\theta) =$  \_\_\_\_\_  
 $\sin(\theta) =$  \_\_\_\_\_  
 $\cos(\theta) =$  \_\_\_\_\_  
 $\tan(\theta) =$  \_\_\_\_\_  
 $\cot(\theta) =$  \_\_\_\_\_

**24.**(1 pt) For  $0 < \theta < \pi/2$ , find the values of the trigonometric functions based on the given one (give your answers with THREE DECIMAL PLACES or as fractions, e.g. you can enter 3/5).

If  $\tan(\theta) = \frac{9}{2}$  then

- $\cot(\theta) =$  \_\_\_\_\_  
 $\sin(\theta) =$  \_\_\_\_\_  
 $\cos(\theta) =$  \_\_\_\_\_  
 $\sec(\theta) =$  \_\_\_\_\_  
 $\csc(\theta) =$  \_\_\_\_\_

**25.**(1 pt)

Find an angle between 0 and  $2\pi$  that is coterminal with the given angle. (Note: You can enter  $\pi$  as 'pi' in your answers.)

- (a)  $\frac{11\pi}{5}$  \_\_\_\_\_  
(b)  $\frac{-16\pi}{3}$  \_\_\_\_\_  
(c)  $\frac{69\pi}{2}$  \_\_\_\_\_  
(d)  $\frac{17\pi}{9}$  \_\_\_\_\_