

# Unit 10 Test Review

KEY

For Questions 1 & 2, rewrite the radian measures in degrees.

1.  $\frac{5\pi}{6} = 150^\circ$

2.  $\frac{13\pi}{3} = 780^\circ$

For Questions 3-5, rewrite the degree measures in radians.

3.  $-575^\circ = \frac{-115\pi}{36}$

4.  $1235^\circ = \frac{247\pi}{36}$

5.  $-135^\circ = \frac{-3\pi}{4}$

For Questions 6-11, find the exact value of each trigonometric function.

6.  $\cos\left(\frac{\pi}{3}\right) = \frac{1}{2}$

7.  $\sin(315^\circ) = \frac{-\sqrt{2}}{2}$

8.  $\cot(-60^\circ)$

$\frac{x}{y} = \frac{\frac{1}{2}}{\frac{-\sqrt{3}}{2}} = \frac{1}{2} \cdot \frac{2}{\sqrt{3}} = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$

9.  $\csc\left(\frac{7\pi}{3}\right) = \frac{1}{\frac{\sqrt{3}}{2}} = 1 \cdot \frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$

10.  $\sec\left(\frac{\pi}{4}\right)$

$\frac{1}{x} = \frac{1}{\frac{\sqrt{2}}{2}} = 1 \cdot \frac{2}{\sqrt{2}} = \frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2} = \sqrt{2}$

11.  $\cot\left(\frac{5\pi}{4}\right)$

$\frac{x}{y} = \frac{\frac{-\sqrt{2}}{2}}{\frac{-\sqrt{2}}{2}} = \frac{-\sqrt{2}}{2} \cdot \frac{2}{\sqrt{2}} = 1$

For problems 12-15, find two angles that are coterminal with the given angle measure. One of your answers should be a positive angle and one should be a negative angle.

12.  $235^\circ + 360 = 595^\circ$   
 $-360 = -125^\circ$

13.  $1155^\circ + 360 = 1515^\circ$   
 $-360 = -795^\circ$

14.  $\frac{5\pi}{4} + \frac{8\pi}{4} = \frac{13\pi}{4}$   
 $-\frac{8\pi}{4} = \frac{-3\pi}{4}$

15.  $\frac{13\pi}{6} + \frac{12\pi}{6} = \frac{25\pi}{6}$   
 $\frac{13\pi}{6} - \frac{12\pi}{6} - \frac{12\pi}{6} = \frac{-11\pi}{6}$

many possible answers

For 16-19, find the sine and cosine of the angle in standard position on a unit circle given point P on the terminal side of that angle.

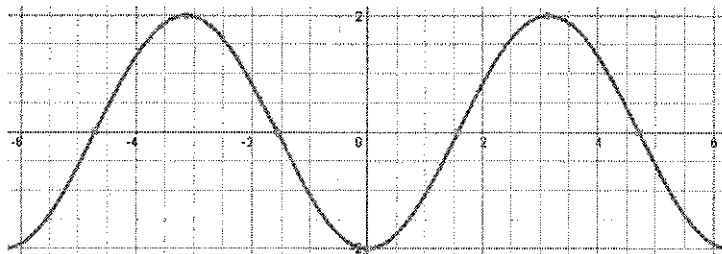
16.  $P\left(-\frac{4}{5}, -\frac{3}{5}\right)$   $\sin \theta = \frac{-3}{5}$   $\cos \theta = \frac{-4}{5}$   
*y-value* *x-value*

17.  $P\left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$   $\sin \theta = \frac{-\sqrt{2}}{2}$   $\cos \theta = \frac{-\sqrt{2}}{2}$

18.  $P\left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$   $\sin \theta = \frac{-\sqrt{3}}{2}$   $\cos \theta = \frac{-1}{2}$

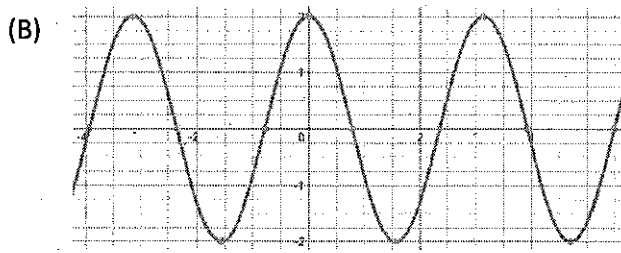
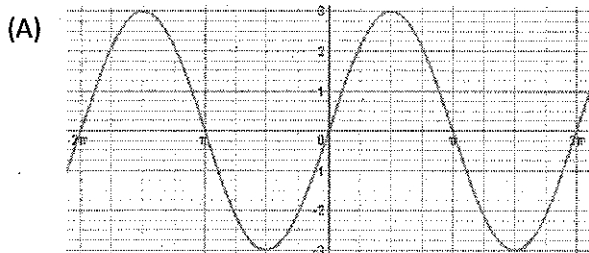
19.  $P\left(-\frac{9}{41}, -\frac{40}{41}\right)$   $\sin \theta = \frac{-40}{41}$   $\cos \theta = \frac{-9}{41}$

20. Use the graph at the right.



- a. What **term** is used to describe how high or low a graph changes? Amplitude
- b. What **term** is used to describe how long it takes for the function to repeat? Period
- c. Find the period of the function. 6
- d. Find the amplitude of the function. 2

21. Use the following two graphs to answer the questions.



Period: 2π

Amplitude: 3

Period: 3

Amplitude: 2

Is graph (A) a sine function or cosine function? How do you know?

*sine → begins at 0*

Is graph (B) a sine function or cosine function? How do you know?

*cosine - begins above 0*