

Find each value by referring to the graph of the sine or the cosine function.

19.  $\cos 8\pi$                       20.  $\sin 11\pi$                       21.  $\cos \frac{\pi}{2}$   
 22.  $\sin \left(-\frac{3\pi}{2}\right)$                       23.  $\sin \frac{7\pi}{2}$                       24.  $\cos (-3\pi)$

25. What is the value of  $\sin \pi + \cos \pi$ ?

26. Find the value of  $\sin 2\pi - \cos 2\pi$ .

Find the values of  $\theta$  for which each equation is true.

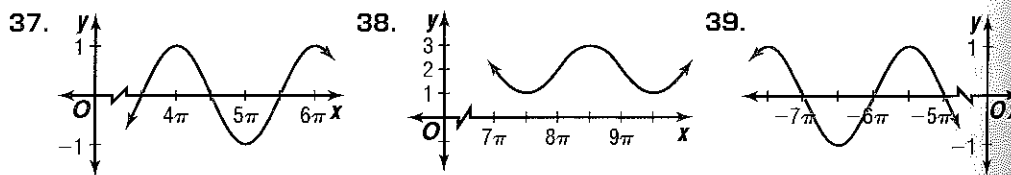
27.  $\cos \theta = -1$                       28.  $\sin \theta = 1$                       29.  $\cos \theta = 0$

30. Under what conditions does  $\cos \theta = 1$ ?

Graph each function for the given interval.

31.  $y = \sin x, -5\pi \leq x \leq -3\pi$                       32.  $y = \cos x, 8\pi \leq x \leq 10\pi$   
 33.  $y = \cos x, -5\pi \leq x \leq -3\pi$                       34.  $y = \sin x, \frac{9\pi}{2} \leq x \leq \frac{13\pi}{2}$   
 35.  $y = \cos x, -\frac{7\pi}{2} \leq x \leq -\frac{3\pi}{2}$                       36.  $y = \sin x, \frac{7\pi}{2} \leq x \leq \frac{11\pi}{2}$

Determine whether each graph is  $y = \sin x$ ,  $y = \cos x$ , or neither. Explain.



40. Describe a transformation that would change the graph of the sine function to the graph of the cosine function.

41. Name any lines of symmetry for the graph of  $y = \sin x$ .

42. Name any lines of symmetry for the graph of  $y = \cos x$ .

43. Use the graph of the sine function to find the values of  $\theta$  for which each statement is true.

- a.  $\csc \theta = 1$                       b.  $\csc \theta = -1$                       c.  $\csc \theta$  is undefined.

44. Use the graph of the cosine function to find the values of  $\theta$  for which each statement is true.

- a.  $\sec \theta = 1$                       b.  $\sec \theta = -1$                       c.  $\sec \theta$  is undefined.

**Graphing Calculator**



Use a graphing calculator to graph the sine and cosine functions on the same set of axes for  $0 \leq x \leq 2\pi$ . Use the graphs to find the values of  $x$ , if any, for which each of the following is true.

45.  $\sin x = -\cos x$                       46.  $\sin x \leq \cos x$   
 47.  $\sin x \cos x > 1$                       48.  $\sin x \cos x \leq 0$   
 49.  $\sin x + \cos x = 1$                       50.  $\sin x - \cos x = 0$