

Determine the phase shift of the function.

$$1) y = \frac{1}{2} \sin(3x + \pi)$$

1) _____

A) $\frac{\pi}{2}$ units to the right

B) π units to the left

C) $-\frac{\pi}{3}$ units to the left

D) $\frac{\pi}{3}$ units to the left

Graph the function.

$$2) y = 3 \sin 3x$$

$$3) y = 2 \sin \frac{1}{2}x$$

Determine the phase shift of the function.

$$4) y = -3 \cos(8x + \pi)$$

4) _____

A) 8π units to the right

B) $\frac{\pi}{8}$ units to the left

C) 3π units to the right

D) $\frac{\pi}{3}$ units to the left

Graph the function.

$$5) y = 2 \cos(3x - \pi)$$

Use a vertical shift to graph the function.

$$6) y = 2 + \cos x$$

Solve the problem.

7) The current I , in amperes, flowing through a particular ac (alternating current) circuit at time t seconds is

$$I = 110 \sin\left(35\pi t - \frac{\pi}{8}\right)$$

What is the period of the current?

8) Tides go up and down in a 12.8-hour period. The average depth of a certain river is 8 m and ranges from 5 to 11 m. The variation can be approximated by a sine curve. Write an equation that gives the approximate variation y , if x is the number of hours after midnight and high tide occurs at 10:00 am.

8) _____

A) $y = 3 \sin\left(\frac{\pi x}{6.4} - \frac{10\pi}{6.4}\right) + 8$

B) $y = 8 \sin\left(\frac{\pi x}{6.4} - 10\pi\right) + 3$

C) $y = 3 \sin\left(\frac{\pi x}{6.4} - \frac{6.8\pi}{6.4}\right) + 8$

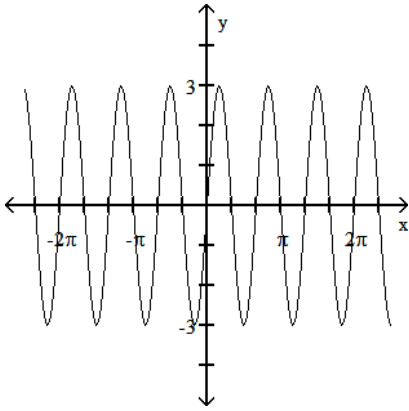
D) $y = 8 \sin\left(\frac{\pi x}{6.4} - \frac{10\pi}{6.4}\right) + 3$

Answer Key

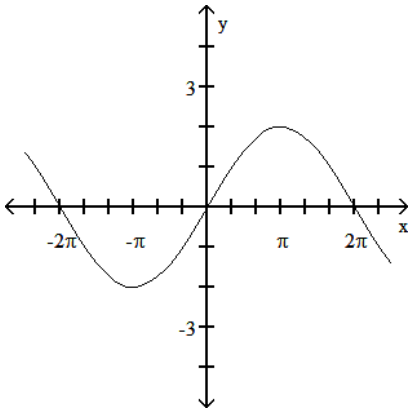
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1) D

2)

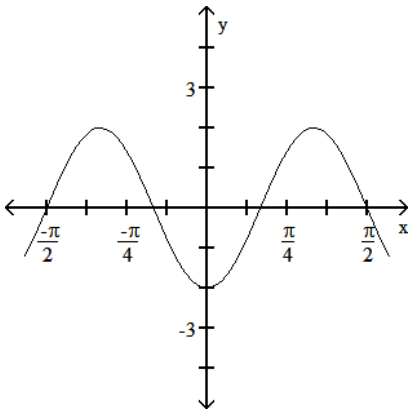


3)



4) B

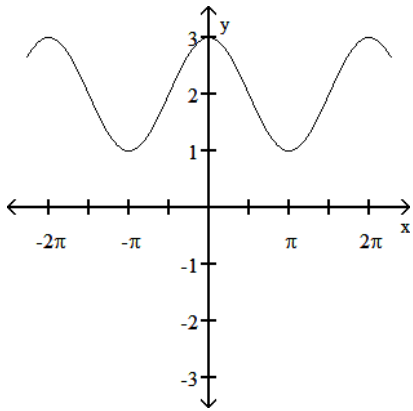
5)



Answer Key

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6)



7) $\frac{2}{35}$ second

8) C