

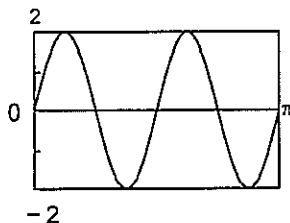
Student: _____
Date: _____

Instructor: Joe Better's

Course: Pre-Calculus Pre AP (Master Course)

Assignment: 6.4 Classwork Day 1

1. Match the graph to the appropriate function.



Choose the equation that corresponds to the graph.

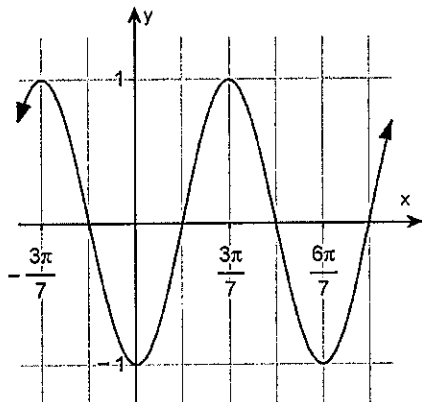
$$y = 2 \sin(4x) \frac{1}{4}$$

$$y = -2 \sin\left(\frac{1}{4}x\right) 4$$

$$y = 2 \sin\left(\frac{1}{4}x\right) 4$$

$$y = -2 \sin(4x) \frac{1}{4}$$

2. Find an equation for the graph.



Which is an equation for the graph?

A. $y = -\cos\left(\frac{7}{3}x\right)$

B. $y = -\sin\left(\frac{7}{3}x\right)$

C. $y = \sin\left(\frac{7}{3}x\right)$

D. $y = \frac{7}{3} \cos(x)$

E. $y = \cos\left(\frac{7}{3}x\right)$

F. $y = -\frac{7}{3} \sin(x)$

3. The voltage V produced by an ac generator is $V = 190 \sin(100\pi t)$. Use this information to answer the questions below.

(a) What is the amplitude of the voltage V ?

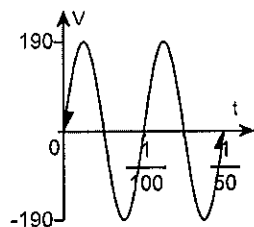
The amplitude of the voltage is _____.

What is the period of the voltage V ?

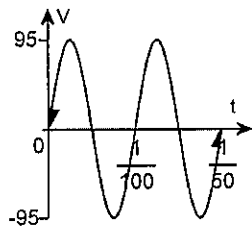
$T =$ _____ (Type an integer or a simplified fraction.)

(b) Which of the following shows a graph of the voltage V over two periods, beginning at $t = 0$?

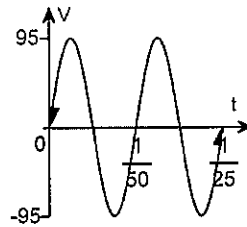
A.



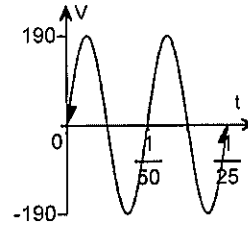
B.



C.



D.



(c) If a resistance $R = 80$ ohms is present, what is the current I ? [Hint: Use Ohm's Law, $V = IR$.]

$I =$ _____ $\sin(100\pi t)$

(Round to the nearest tenth as needed.)

(d) What is the amplitude of the current I ?

The amplitude of the current is _____.

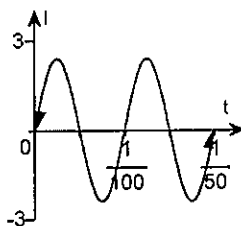
(Round to the nearest tenth as needed.)

What is the period of the current I ?

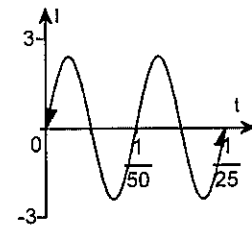
$T =$ _____ (Type an integer or a simplified fraction.)

(e) Which of the following shows a graph of the current I over two periods, beginning at $t = 0$?

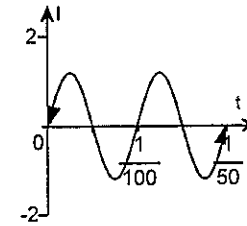
A.



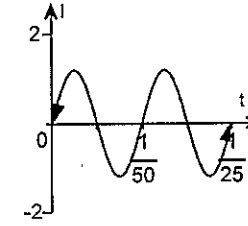
B.



C.



D.

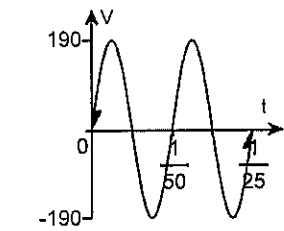


1. $y = 2 \sin(4x) \frac{1}{4}$

2. A. $y = -\cos\left(\frac{7}{3}x\right)$

3. 190

$$\frac{1}{50}$$

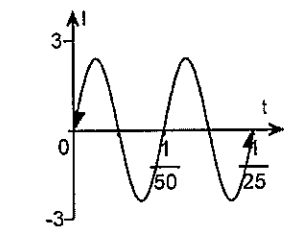


D.

2.4

2.4

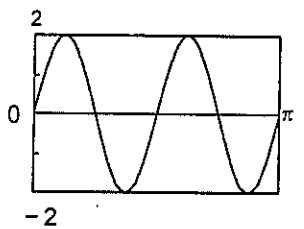
$$\frac{1}{50}$$



B.

6.4 classwork day 1

①



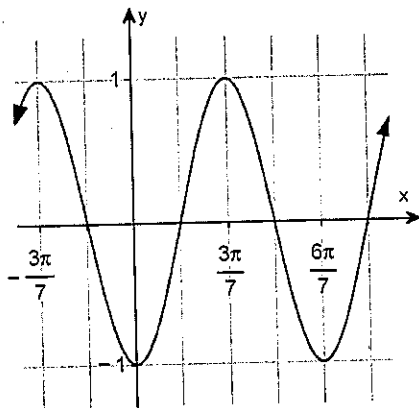
$$A = |2| = 2$$

$$\omega = \frac{2\pi}{\text{period}} = \frac{2\pi}{(\pi/2)} = 4$$

$$y = A \sin(\omega x)$$

$$y = 2 \sin(4x)$$

②



$$A = |-1| = 1$$

$$\omega = \frac{2\pi}{\text{period}} = \frac{2\pi}{6\pi/7} = \frac{7}{3}$$

$$y = -A \cos(\omega x)$$

$$y = -\cos\left(\frac{7}{3}x\right)$$

A

6.4 classwork day 1 continued

$$\textcircled{3} \quad v = 190 \sin(100\pi t)$$

$$\text{a) Amplitude} = |190| = \boxed{190}$$

$$\text{period} = T = \frac{2\pi}{\omega} = \frac{2\pi}{100\pi} = \boxed{\frac{1}{50}}$$

b) Graph \boxed{D}

$$\text{c) } v = IR$$

$$190 \sin(100\pi t) = I(80)$$

$$\boxed{I = 2.4 \sin(100\pi t)}$$

$$\text{d) Amplitude} = |2.4| = \boxed{2.4}$$

$$\text{period} = T = \frac{2\pi}{\omega} = \frac{2\pi}{100\pi} = \boxed{\frac{1}{50}}$$

e) Graph \boxed{B}