

Name: _____

Date: _____

7-6 THE FREQUENCY AND PERIOD OF A SINUSOIDAL GRAPH HOMEWORK

FLUENCY

1. For each of the following sinusoidal functions, determine its period in exact terms of pi.

(a) $y = 6 \sin(10x)$

(b) $y = -2 \cos(8x)$

(c) $y = 7 \sin\left(\frac{1}{3}x\right)$

(d) $y = \frac{2}{3} \cos\left(\frac{4}{3}x\right)$

(e) $y = 8 \sin(0.25x)$

(f) $y = 2.5 \cos(0.4x)$

2. For each of the following sinusoidal functions, determine its exact period.

(a) $y = 5 \sin\left(\frac{2\pi}{7}x\right)$

(b) $y = 5 \cos\left(\frac{2\pi}{365}t\right) + 12$

(c) $y = -8 \sin\left(\frac{\pi}{9}x\right) - 1$

3. If the period of a sinusoidal function is equal to 18, which of the following gives its frequency?

(1) $\frac{\pi}{9}$

(3) $\frac{\pi}{18}$

(2) 18π

(4) 6π

4. It is known for that a particular sine curve repeats its fundamental pattern after every $\frac{2\pi}{7}$ units along the x -axis. Which of the following is the frequency of this curve?

(1) $\frac{2}{7}$

(3) $\frac{7}{2}$

(2) 7

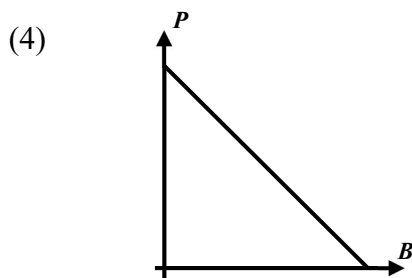
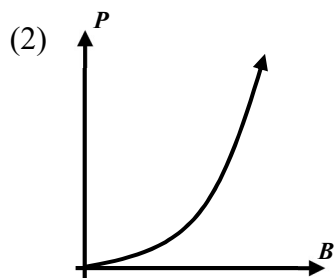
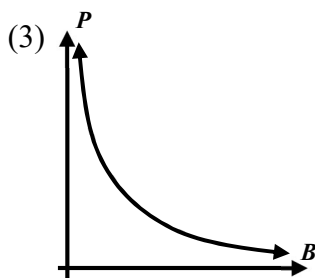
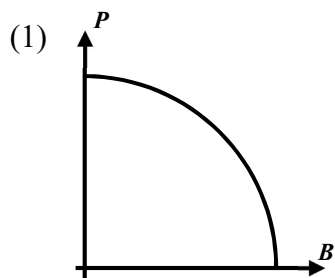
(4) 14



5. When the period of a sine function doubles, the frequency

- (1) doubles. (3) is halved.
 (2) increases by 2. (4) decreases by 2.

6. Which of the following graphs shows the relationship between the frequency, B , and the period, P , of a sinusoidal graph? Experiment on your calculator. Graph the expression $P = \frac{2\pi}{B}$.



7. Consider the curve whose equation is $y = -2 \cos\left(\frac{\pi}{8}x\right) + 3$.

(a) Determine the exact period of this sinusoidal function.

(b) What is the amplitude of this sinusoidal function?

(c) What is the midline value of this sinusoidal function?

(d) Sketch the function on the axes for a full period on both sides of the y -axis. Label the scale on your x -axis.

