

Periodic Graphs

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Name _____

Date _____

Find the amplitude, the period in radians, the phase shift in radians, and the vertical shift.

1) $y = 1 + \frac{1}{3} \cdot \cos\left(\frac{\theta}{5} + \frac{\pi}{4}\right)$

2) $y = \sin\left(\frac{\theta}{2} - \frac{2\pi}{3}\right) - 1$

3) $y = 10\cos\left(2\theta + \frac{2\pi}{3}\right) - 3$

4) $y = \frac{1}{9} \cdot \sin\left(7\theta - \frac{5\pi}{6}\right) - 3$

5) $y = 5\cos\left(\frac{\theta}{8} + \frac{3\pi}{4}\right) + 4$

6) $y = 4\sin\left(7\theta + \frac{\pi}{3}\right) - 3$

$$7) \ y = 5 + \sin\left(\theta + \frac{2\pi}{3}\right)$$

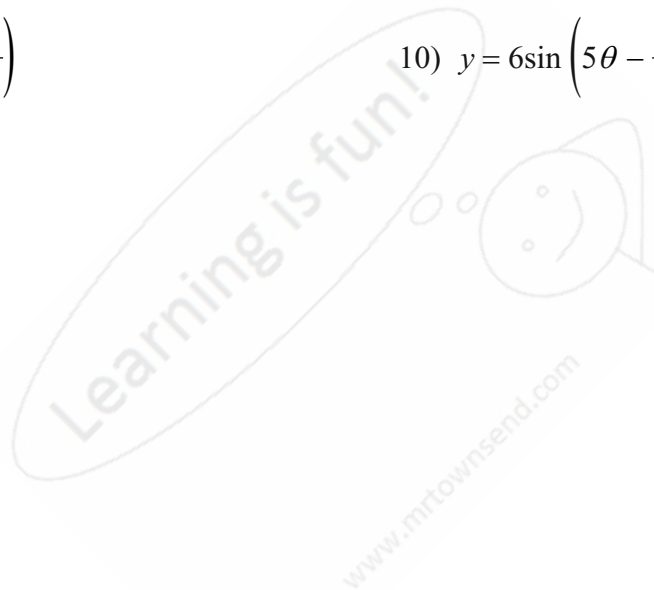
$$8) \ y = 4\sin\left(\theta - \frac{3\pi}{2}\right) + 2$$

$$9) \ y = \frac{1}{8} \cdot \sin\left(4\theta - \frac{2\pi}{3}\right)$$

$$10) \ y = 6\sin\left(5\theta - \frac{7\pi}{6}\right) + 2$$

$$11) \ y = 1 + 7\sin\left(\frac{\theta}{8} + \frac{7\pi}{4}\right)$$

$$12) \ y = 10\cos\left(\frac{\theta}{4} + \frac{\pi}{2}\right) + 5$$



Answers to Periodic Graphs

- | | | |
|--|--|---|
| <p>1) Amplitude: $\frac{1}{3}$
 Period: 10π
 Phase shift: Left $\frac{5\pi}{4}$
 Vert. shift: Up 1</p> | <p>2) Amplitude: 1
 Period: 4π
 Phase shift: Right $\frac{4\pi}{3}$
 Vert. shift: Down 1</p> | <p>3) Amplitude: 10
 Period: π
 Phase shift: Left $\frac{\pi}{3}$
 Vert. shift: Down 3</p> |
| <p>4) Amplitude: $\frac{1}{9}$
 Period: $\frac{2\pi}{7}$
 Phase shift: Right $\frac{5\pi}{42}$
 Vert. shift: Down 3</p> | <p>5) Amplitude: 5
 Period: 16π
 Phase shift: Left 6π
 Vert. shift: Up 4</p> | <p>6) Amplitude: 4
 Period: $\frac{2\pi}{7}$
 Phase shift: Left $\frac{\pi}{21}$
 Vert. shift: Down 3</p> |
| <p>7) Amplitude: 1
 Period: 2π
 Phase shift: Left $\frac{2\pi}{3}$
 Vert. shift: Up 5</p> | <p>8) Amplitude: 4
 Period: 2π
 Phase shift: Right $\frac{3\pi}{2}$
 Vert. shift: Up 2</p> | <p>9) Amplitude: $\frac{1}{8}$
 Period: $\frac{\pi}{2}$
 Phase shift: Right $\frac{\pi}{6}$
 Vert. shift: None</p> |
| <p>10) Amplitude: 6
 Period: $\frac{2\pi}{5}$
 Phase shift: Right $\frac{7\pi}{30}$
 Vert. shift: Up 2</p> | <p>11) Amplitude: 7
 Period: 16π
 Phase shift: Left 14π
 Vert. shift: Up 1</p> | <p>12) Amplitude: 10
 Period: 8π
 Phase shift: Left 2π
 Vert. shift: Up 5</p> |