Math 3 Name_____

Unit 5.4 Graph Trigonometric Functions (Advanced) PRACTICE

Period____

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

1) $y = 2 + \frac{1}{9} \cdot \sin\left(\frac{\theta}{6} - \frac{\pi}{2}\right)$

Amp:
Period:
Phase shift:
Vert. Shift:
Min:
Max:

Amplitude: $\frac{1}{9}$
Period: 12π
Phase shift: Right 3π
Vert. shift: Up 2
Min: $\frac{17}{9}$
Max: $\frac{19}{9}$

2) $y = \frac{1}{7} \cdot \cos\left(7\theta + \frac{\pi}{6}\right) + 4$

Amp:
Period:
Phase shift:
Vert. Shift:
Min:
Max:

Amplitude: $\frac{1}{7}$
Period: $\frac{2\pi}{7}$
Phase shift: Left $\frac{\pi}{42}$
Vert. shift: Up 4
Min: $\frac{27}{7}$
Max: $\frac{29}{7}$

3) $y = 6\sin\left(3\theta - \frac{5\pi}{6}\right) - 5$

Amp:
Period:
Phase shift:
Vert. Shift:
Min:
Max:

Amplitude: 6
Period: $\frac{2\pi}{3}$
Phase shift: Right $\frac{5\pi}{18}$
Vert. shift: Down 5
Min: –11
Max: 1

4) $y = -4 + 8\cos\left(5\theta + \frac{5\pi}{6}\right)$

Amp:
Period:
Phase shift:
Vert. Shift:
Min:
Max:

Amplitude: 8
Period: $\frac{2\pi}{5}$
Phase shift: Left $\frac{\pi}{6}$
Vert. shift: Down 4
Min: –12
Max: 4

5) $y = 5\cos 2\theta + 1$

Amp:
Period:
Phase shift:
Vert. Shift:
Min:
Max:

Amplitude: 5
Period: π
Phase shift: None
Vert. shift: Up 1
Min: –4
Max: 6

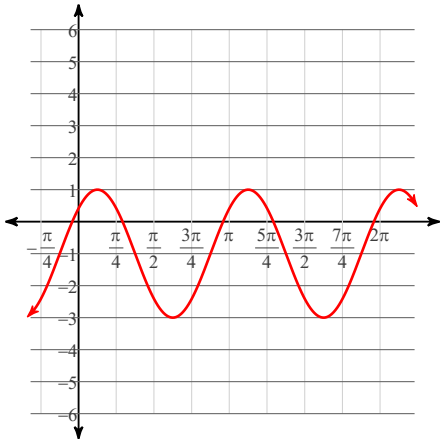
6) $y = 10\cos 5\theta$

Amp:
Period:
Phase shift:
Vert. Shift:
Min:
Max:

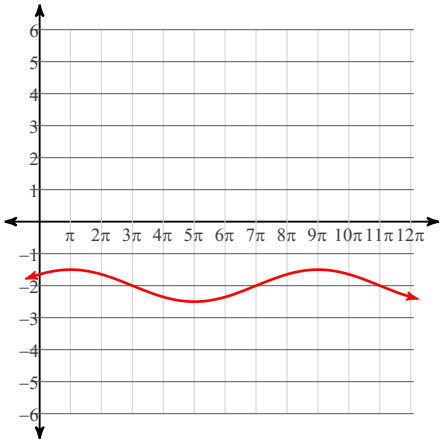
Amplitude: 10
Period: $\frac{2\pi}{5}$
Phase shift: None
Vert. shift: None
Min: –10
Max: 10

Graph each function using radians.

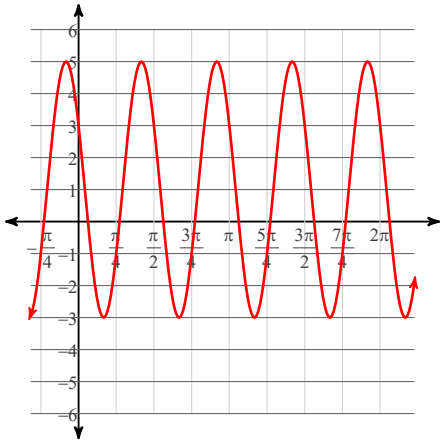
7) $y = 2\sin\left(2\theta + \frac{\pi}{4}\right) - 1$



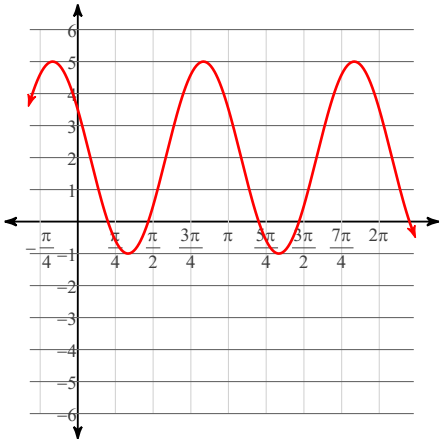
8) $y = \frac{1}{2} \cdot \cos\left(\frac{\theta}{4} + \frac{7\pi}{4}\right) - 2$



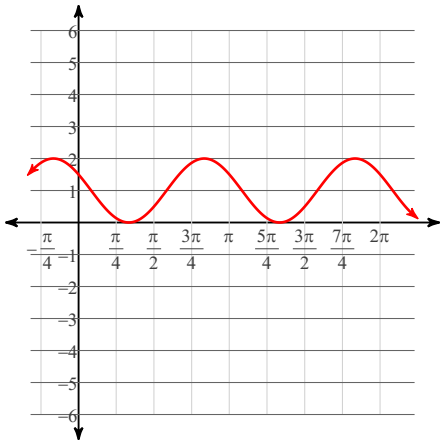
9) $y = 1 + 4\cos\left(4\theta + \frac{\pi}{3}\right)$



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



11) $y = 1 + \sin\left(2\theta + \frac{5\pi}{6}\right)$



12) $y = \frac{1}{2} \cdot \sin\left(2\theta + \frac{3\pi}{4}\right) + 1$