

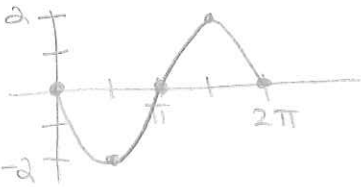
### 6-4 Amplitude and Period of Sine and Cosine Functions (Practice #2)

State the amplitude and period for each function. Then graph each function on graph paper.

Period

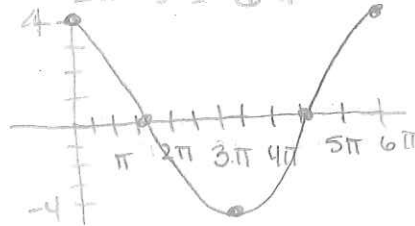
1.  $y = -2\sin\theta$

$A = 2$  period =  $2\pi$



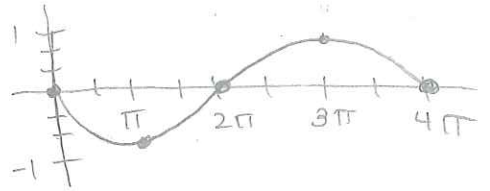
2.  $y = 4\cos\frac{\theta}{3}$   $A = 4$

$2\pi \cdot 3 = 6\pi$



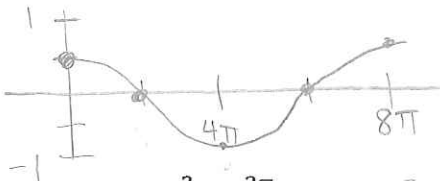
3.  $y = -\frac{2}{3}\sin\frac{\theta}{2}$

$2\pi \cdot 2 = 4\pi$   
 $A = 2/3$



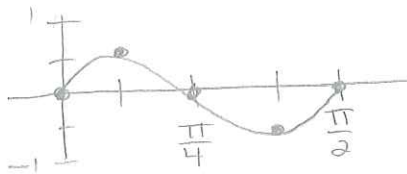
4.  $y = \frac{1}{2}\cos\frac{\theta}{4}$   $A = 1/2$

period =  $2\pi \cdot 4 = 8\pi$



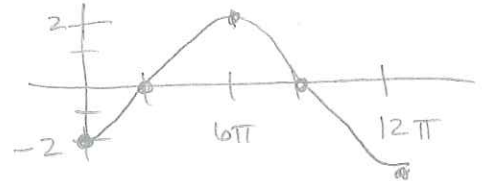
5.  $y = 0.5\sin 4\theta$

per =  $\frac{2\pi}{4} = \frac{\pi}{2}$  Amp = 0.5



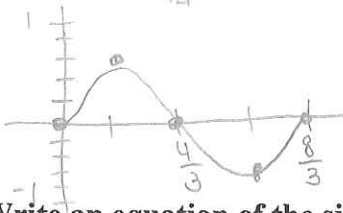
6.  $y = -2\cos\frac{\theta}{6}$

per =  $\frac{2\pi}{1/6} = 12\pi$  Amp = 2



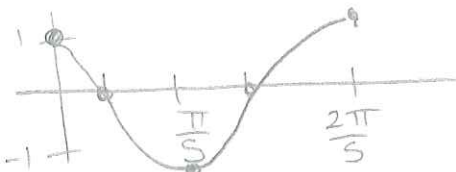
7.  $y = \frac{3}{5}\sin\frac{3\pi}{4}\theta$   $A = 3/5$

per =  $\frac{2\pi}{2\pi/4} = 2\pi \cdot \frac{4}{3\pi} = \frac{8}{3}$



8.  $y = \cos 5\theta$

Amp = 1 Period =  $\frac{2\pi}{5}$



Write an equation of the sine function with each amplitude and period.

9. amplitude = 3, period =  $2\pi$

$\frac{2\pi}{k} = 2\pi$   $k = 1$

$y = \pm 3 \sin\theta$

10. amplitude = 8.5, period =  $\frac{2\pi}{9}$

$\frac{2\pi}{k} = \frac{2\pi}{9}$

$k = 9$

$y = \pm 8.5 \sin 9\theta$

11. amplitude = 2, period =  $\frac{\pi}{3}$

$\frac{2\pi}{k} = \frac{\pi}{3}$

$k = 6$

$y = \pm 2 \sin 6\theta$

12. Amplitude =  $\frac{1}{3}$ , period = 7

$\frac{2\pi}{k} = 7$

$k = \frac{2\pi}{7}$

$y = \pm \frac{1}{3} \sin \frac{2\pi}{7}\theta$

Write an equation of the cosine function with each amplitude and period.

13. Amplitude = 0.5, period =  $0.2\pi$

$$\frac{2\pi}{k} = \frac{2\pi}{10} \quad k=10$$

$$y = \pm 0.5 \cos 10\theta$$

14. Amplitude =  $\frac{1}{5}$ , period =  $\frac{2}{5}\pi$

$$\frac{2\pi}{k} = \frac{2\pi}{5} \quad k=5$$

$$y = \pm \frac{1}{5} \cos 5\theta$$

15. Amplitude = 3, period = 8

$$\frac{2\pi}{k} = 8 \quad k = \frac{\pi}{4}$$

$$y = \pm 3 \cos \frac{\pi}{4}\theta$$

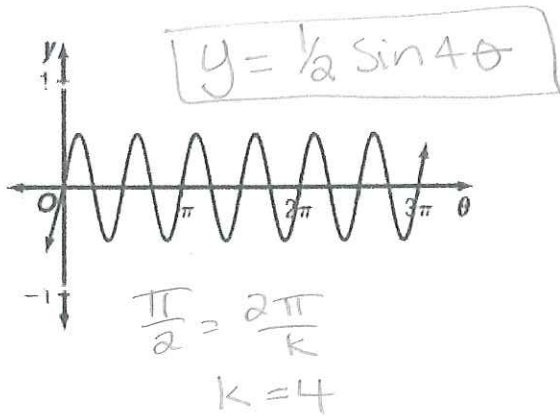
16. Amplitude =  $\frac{1}{4}$ , period =  $\frac{3}{7}$

$$\frac{2\pi}{k} = \frac{3}{7} \quad k = \frac{14\pi}{3}$$

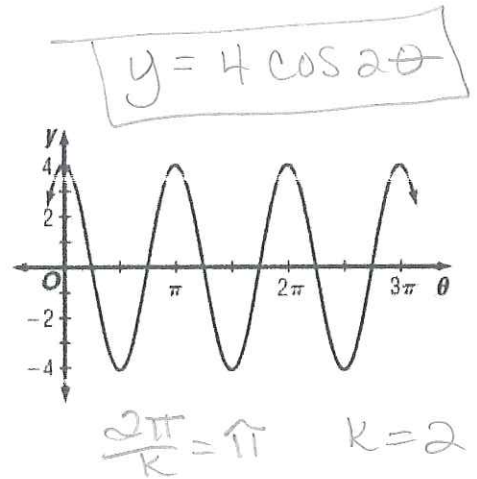
$$y = \pm \frac{1}{4} \cos \frac{14\pi}{3}\theta$$

Write an equation for each graph.

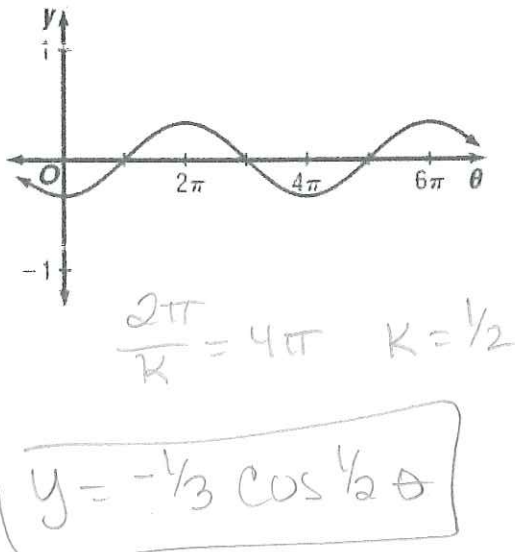
17.



18.



19.



20.

