

Weds, July 14, 2010

# Practice Problems.

Sketch the graph.

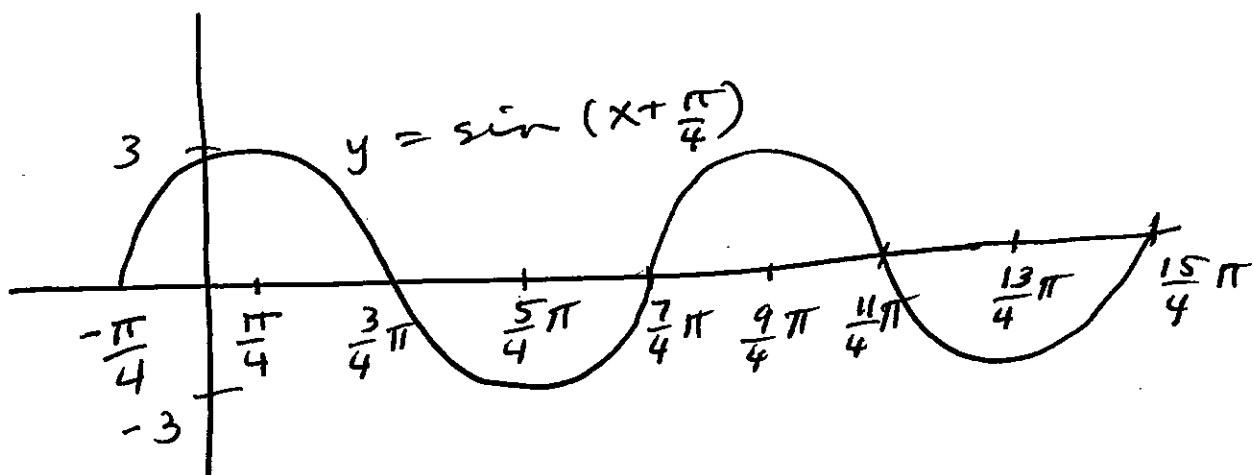
①  $y = -3 \sin(x + \frac{\pi}{4})$

$A = |-3| = 3$

$P = 2\pi = \frac{8}{4}\pi$

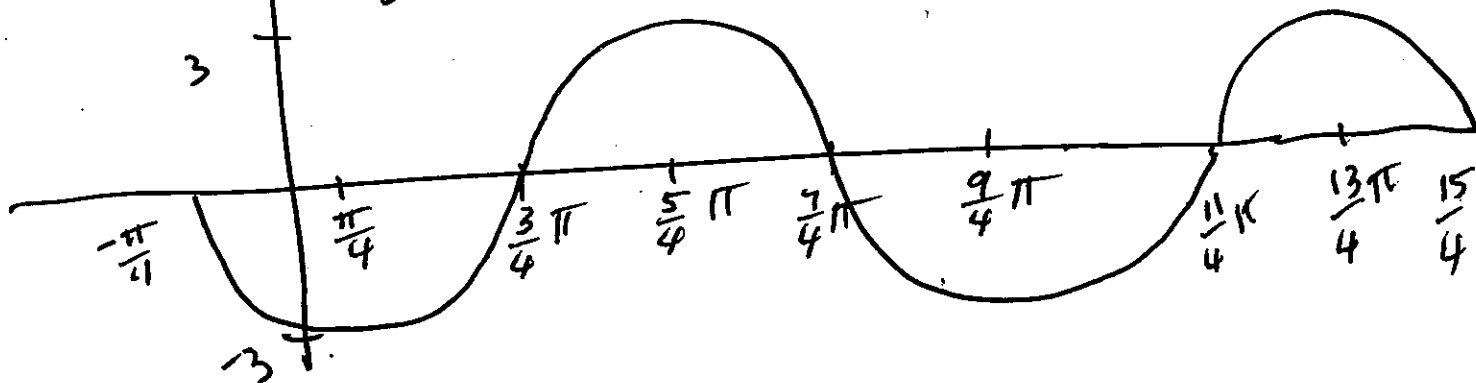
Phase shift:  $\phi = -\frac{\pi}{4}$   
(left)

Qtr Per:  $\frac{2\pi}{4}$



Answer

$y = -3 \sin(x + \frac{\pi}{4})$



②

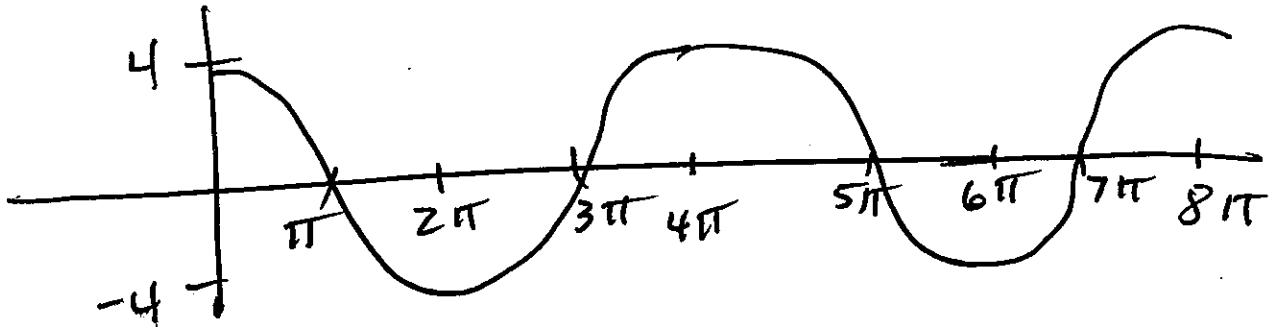
$$y = 4 \cos\left(\frac{x}{2}\right)$$

$$A = 4$$

$$P = \frac{2\pi}{\frac{1}{2}} = 4\pi$$

$$\text{Qtr } P = \pi$$

No phase shift



$$\textcircled{3} \quad y = 2 \sin 3 \left( x + \frac{\pi}{4} \right)$$

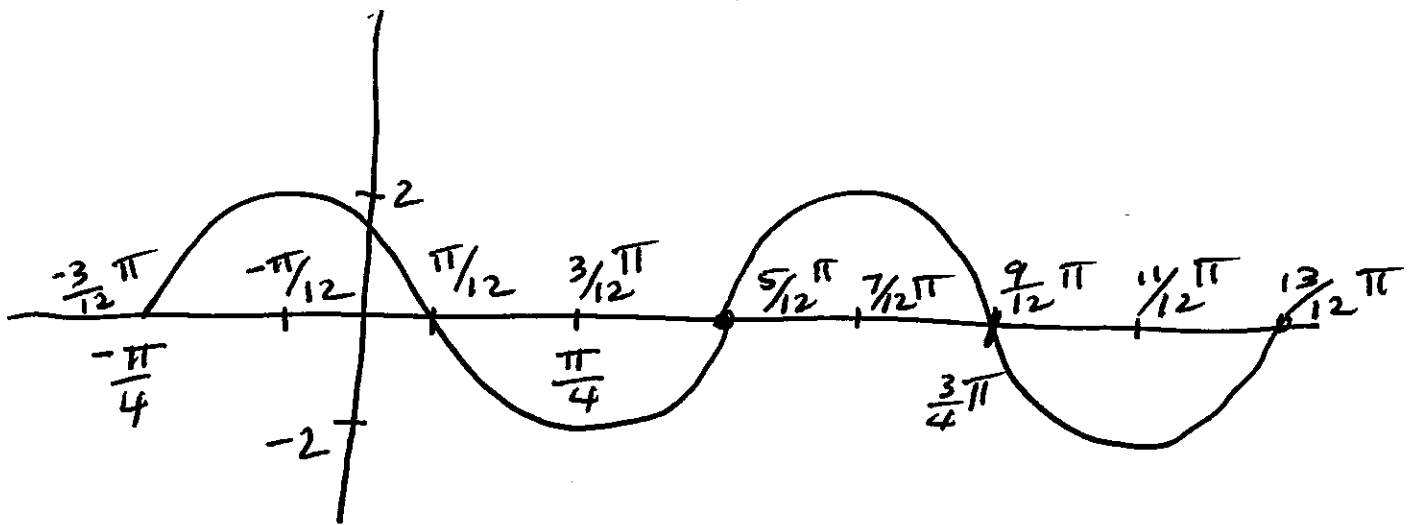
$$A = 2$$

$$P = \frac{2\pi}{3} = \frac{8}{12} \pi$$

$$\text{Phase shift: } \phi = -\frac{\pi}{4} = -\frac{3}{12} \pi$$

(left)

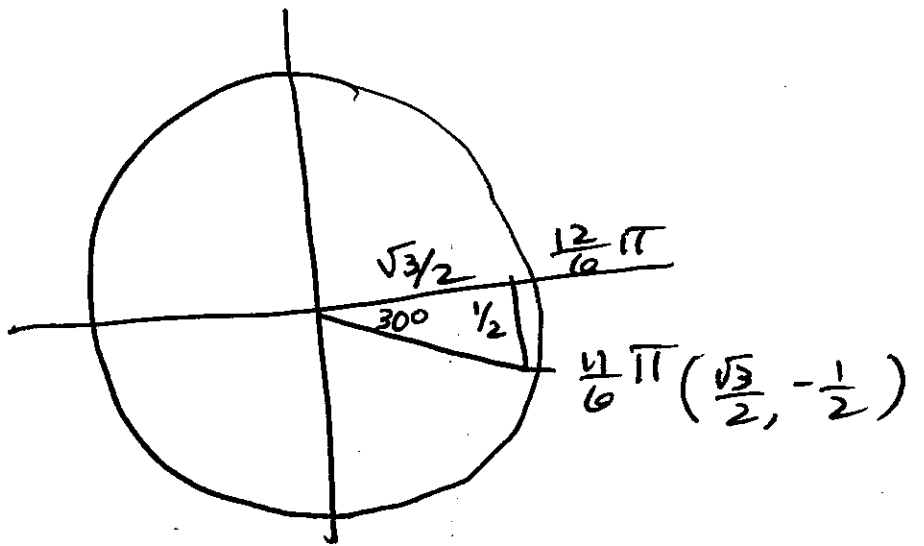
$$\text{Qtr Per: } \frac{\pi}{6} = \frac{2}{12} \pi$$



Evaluate:

④  $\sin \frac{11}{6} \pi$

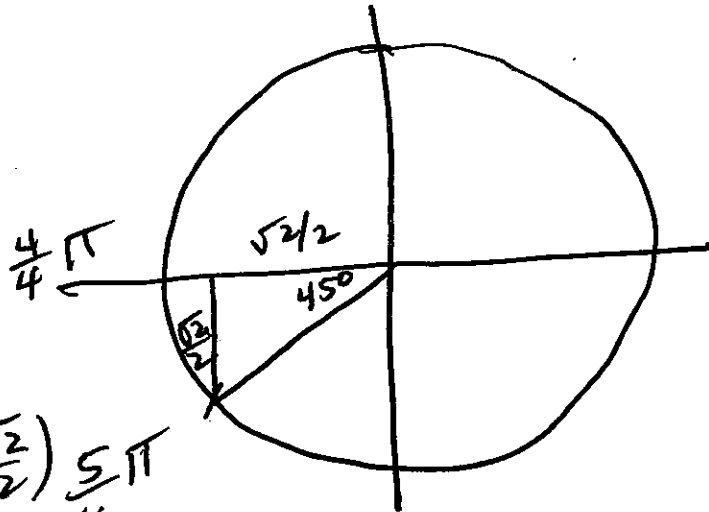
$= -\frac{1}{2}$



⑤

$\cos \frac{5}{4} \pi$

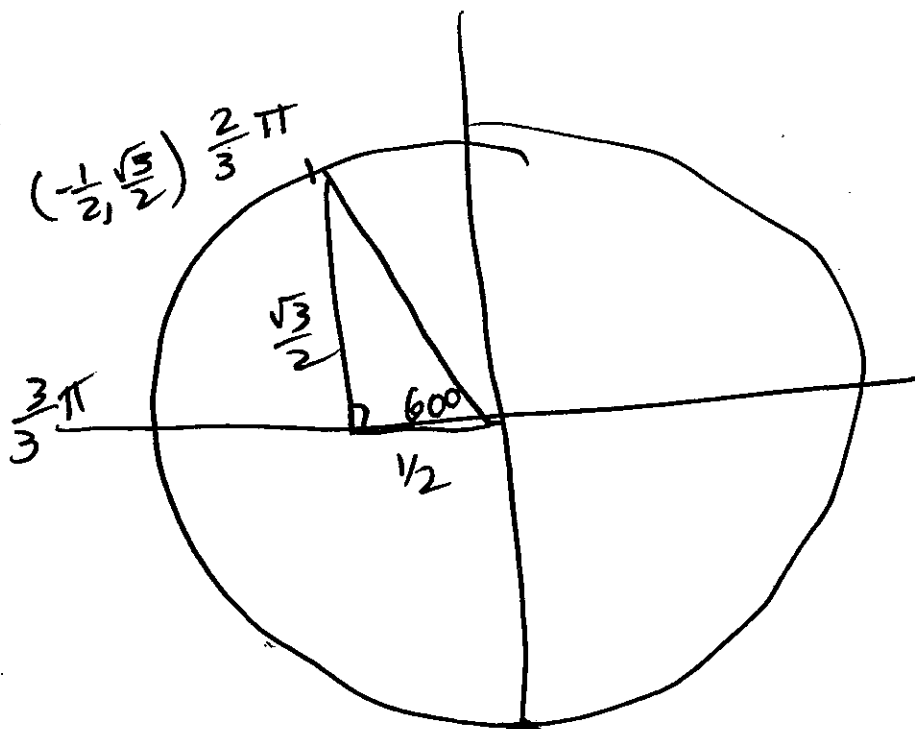
$= -\frac{\sqrt{2}}{2}$



⑥

$\sin \frac{2}{3} \pi$

$= \frac{\sqrt{3}}{2}$



Convert from radians to degrees.

$$\textcircled{7} \quad \frac{2}{3} \pi$$

$$= \frac{2}{3} \pi \cdot \frac{180^\circ}{\pi} = 2 \cdot \frac{180^\circ}{3} = 2 \cdot 60^\circ = 120^\circ$$

$$\textcircled{8} \quad \frac{7}{6} \pi$$

$$= \frac{7}{6} \pi \cdot \frac{180^\circ}{\pi} = 7 \frac{180^\circ}{6} = 7 \cdot 30^\circ = 210^\circ$$

Convert from degrees to radians.

$$\textcircled{9} \quad 135^\circ$$

$$= 135^\circ \cdot \frac{\pi}{180^\circ} = \frac{3 \cdot 45^\circ}{4 \cdot 45^\circ} \pi = \frac{3}{4} \pi$$

$$\textcircled{10} \quad 315^\circ$$

$$= 315^\circ \cdot \frac{\pi}{180^\circ} = \frac{7 \cdot 45^\circ}{4 \cdot 45^\circ} \pi = \frac{7}{4} \pi$$