King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math 002 - Term 132
Recitation (6.3 and 6.4)

Question 1: For the function $y = 3\sin\frac{x}{2}$

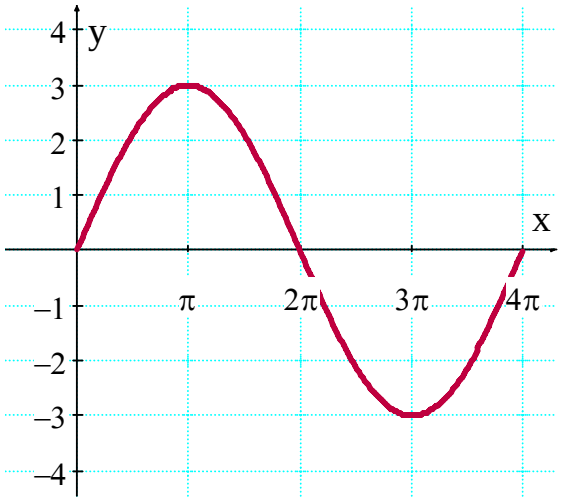
a) Find the amplitude and the period of the function.

b) Draw the graph over one complete period.

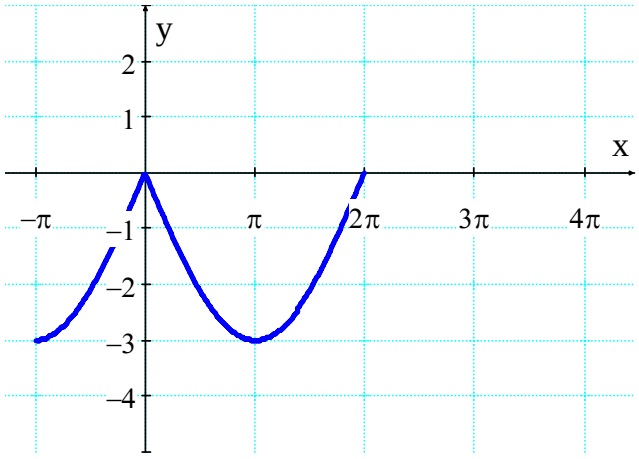
c) Draw $y = -\left|3\sin\frac{x}{2}\right|$ over the interval $[-\pi, 2\pi]$

Answer: **(a):** Amplitude $= |3| = 3$ Period $= \frac{2\pi}{\frac{1}{2}} = 4\pi$

(b):



(c):



Question 2: The graph of the function $y = \frac{1}{2}\cos\frac{\pi}{2}x$ increases over the interval

A) $(2,\ 4)$
B) $(0,\ 2)$
C) $(3,\ 5)$
D) $(1,\ 3)$
E) $(2,\ 5)$

Answer: A

Question 3: The graphs of $y = \cos x$ and $y = \sin x$, $0 \le x \le 2\pi$ intersect each others at

A) no point B) one point C) two points
D) three points E) four points

Answer: two points of intersection

Question 4: Find the range, amplitude, the period and the phase shift of the function

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

Answer:

$Range = [3,7]$

Amplitude $= 2$

Period $= 2$

Phase shift $\frac{1}{2}$

Question 5: If the adjacent figure represents the graph of $y = -2\cos(bx + c)$, then

a) $b = 2\pi,\ c = -\pi$

b) $b = 2\pi,\ c = -\frac{\pi}{4}$

c) $b = \frac{\pi}{2},\ c = \frac{\pi}{4}$

d) $b = \frac{\pi}{2},\ c = \frac{\pi}{2}$

e) $b = \frac{\pi}{4},\ c = \frac{\pi}{2}$