King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math 002 - Term 151
Recitation (6.3 and 6.4)

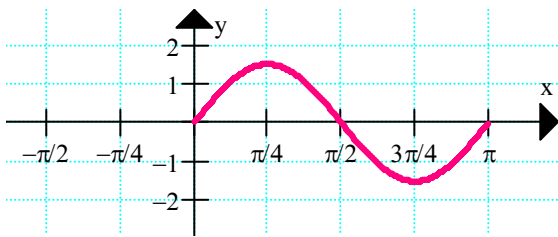--

Question 1:

For the function $\quad y = \dfrac{3}{2}\sin(2x)$
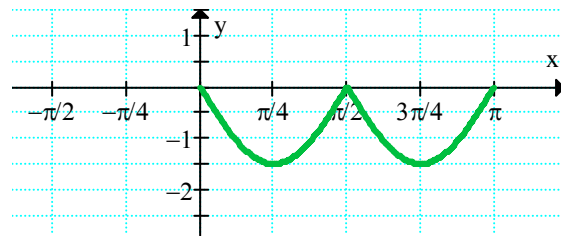
    a) Find the amplitude and the period of the function.

    b) Draw the graph over one complete period.

    c) Draw $y = -\left|\dfrac{3}{2}\sin(2x)\right|$ over the interval $[0, \pi]$

Answer: **(a):** $\text{Amplitude} = \dfrac{3}{2}$ $\qquad\qquad$ $\text{Period} = \pi$

(b):

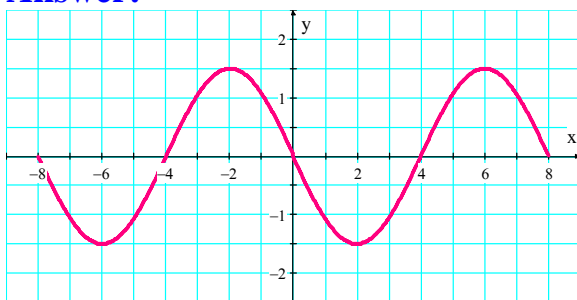
(c):

Question 2:

For $-8 \le x \le 8$, the graph of the function $y = -\dfrac{3}{2}\sin\left(\dfrac{\pi}{4}x\right)$ lies below the x-axis in the interval(s). $\qquad\qquad$ [Hint: Sketch the graph]

A) $(-8, -4)$ and $(0, 4)$

B) $(-4, 0)$ and $(4, 8)$

C) $(-6, -2)$ and $(2, 6)$
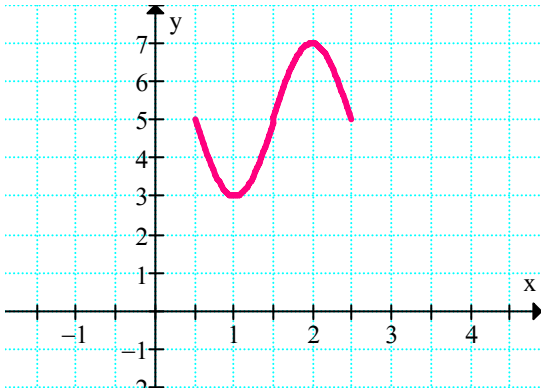
D) $(-4, 0)$ and $(0, 4)$

E) $(-4, 4)$

Answer:

Answer: A

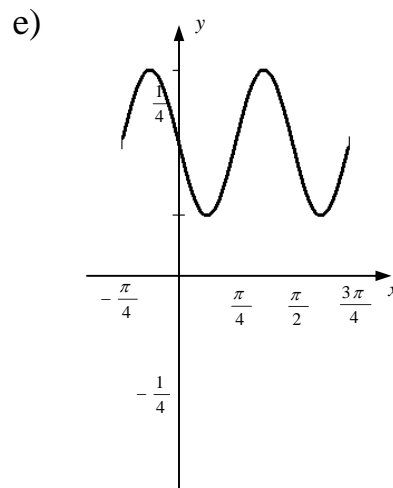## Question 3: Find the maximum value, the period, the amplitude and the phase shift of the
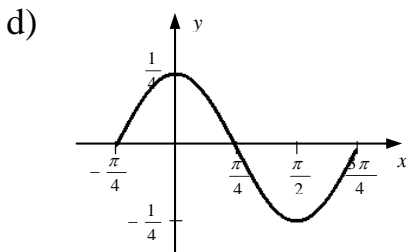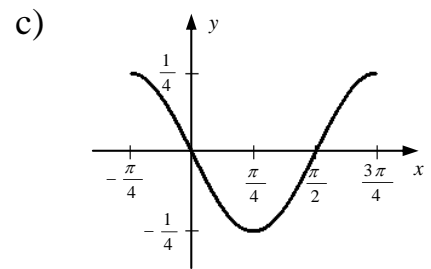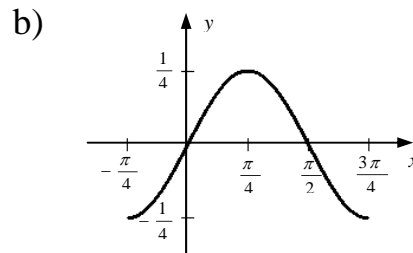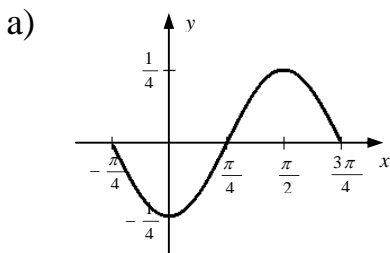
function $y = -2\sin\left(\pi x - \dfrac{\pi}{2}\right) + 5$

Answer: Maximum is $Max = |a| + d = 2 + 5 = 7$ $Period = \dfrac{2\pi}{|b|} = \dfrac{2\pi}{\pi} = 2$

Amplitude $= |a| = |-2| = 2$ Phase shift : $x = -\dfrac{c}{b} = -\dfrac{-\dfrac{\pi}{2}}{\pi} = \dfrac{1}{2}$ unit to the right

Question 4: Which one of the following is the graph of $y = \dfrac{1}{4}\cos 2\left(x + \dfrac{\pi}{4}\right)$ over one period?

a)

b)

c)

d)

e)

Answer: (c):