Graphing Sine and Cosine Functions

1. If the range of $y = a \sin bx$ is [-8,8] and the period is 180^0, then the values for **a** and **b**, respectively are

   a) -8 and 180   b) 8 and 2   c) 2 and 8   d) 180 and -8

   Use the following information to answer the next question.

   A Math 30-1 student was given the following function, $y = -6 \cos 3x$, and asked to analyze the following statements.

   Statement 1   The minimum value is -3.

   Statement 2   The period is 120^0.

   Statement 3   The amplitude is -6

   Statement 4   The y-intercept is negative.

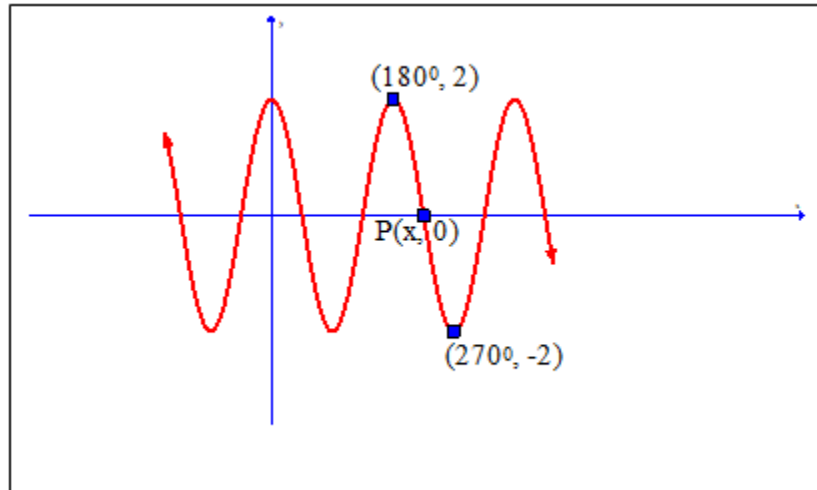   Statement 5   The domain is [-6,6].

2. The student identified the 2 true statements, which are

   a) 2 and 4   b) 2 and 3   c) 1 and 4   d) 3 and 5

3. The point $P\left(\dfrac{\pi}{2},1\right)$ is on the graph of $y = \sin x$. What is the image point P'

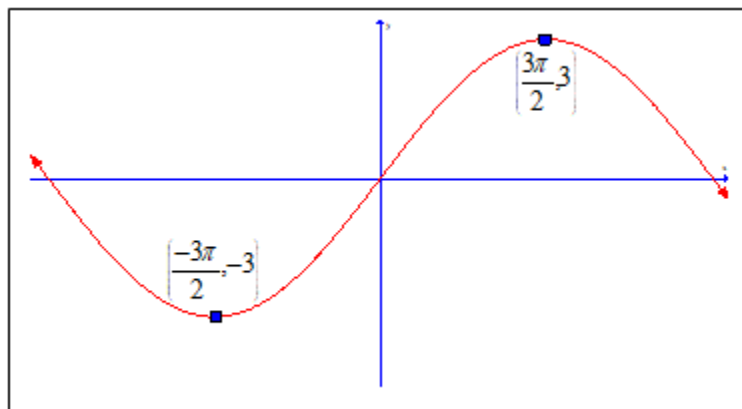   when the sine graph is transformed by $y = -5 \sin\left(\dfrac{1}{4}x\right)$?

   a) $\left(\dfrac{-5\pi}{2},4\right)$ b) $\left(\dfrac{\pi}{8},-5\right)$ c) $(2\pi,-5)$ d) $(\pi,4)$

Use the following graph to answer the next question.

(180°, 2)

P(x, 0)

(270°, -2)

4. a) The amplitude is   _____
   b) The period is   _____
   c) The value of x is   _____

Use the following graph to answer the next question.

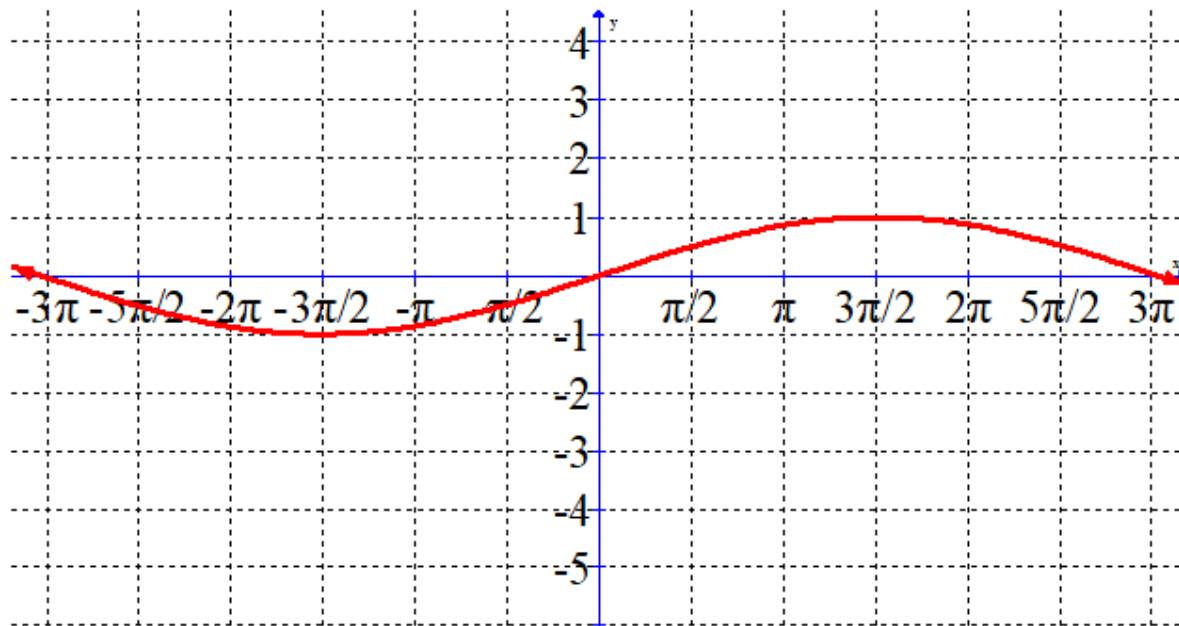$\dfrac{3\pi}{2}, 3$

$\dfrac{-3\pi}{2}, -3$

5. A) The period is _____

   b) The range is _____

   c) The maximum value is _____

   d) The amplitude is _____

For each graph below, state the x-intercepts.

6 a)

-3π $-5\pi/2$ -2π $-3\pi/2$ $-\pi$ $-\pi/2$ $\pi/2$ π $3\pi/2$ 2π $5\pi/2$ 3π
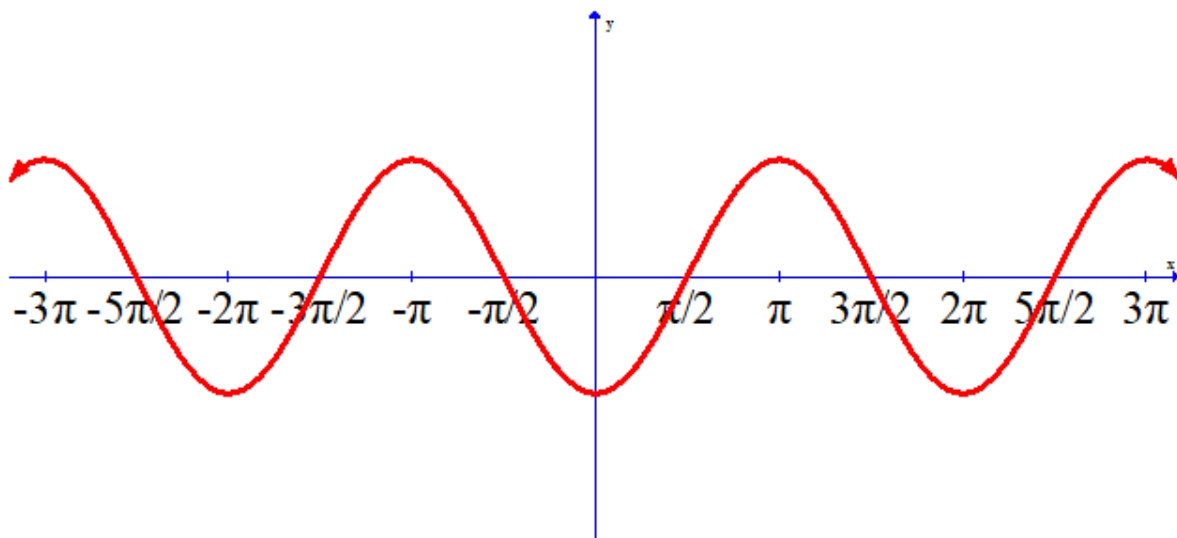
6 b)

7. Sketch the graph of $y = \left(\dfrac{1}{2}\right)\cos 2x$