

King Fahd University of Petroleum and Minerals

Prep-Year Math Program

Math 001 - Term 141

Recitation 2.7

Answered by S. Omar

**Question 1.**

If the graph of  $y = \frac{2x}{x+1}$  is translated one unit to the right and three units downward, what is the new equation of the new graph?

**Answer:**  $y = \frac{-x-2}{x}$

**Question 2:**

If the graph of the function  $y = x\sqrt{x+2}$  is reflected across the y-axis and shifted one unit to the right, then write the new equation of the new graph.

**Answer:**  $(1-x)\sqrt{3-x}$

**Question 3:** Determine which of the following functions are even, odd, or neither.

- a)  $f(x) = 2x - x^5$       **Answer: a)**  $f$  is an odd function.  
 b)  $f(x) = x^4 - 5x + 8$       **Answer: b)**  $f$  is neither even nor odd.  
 c)  $f(x) = x^2 + |x| + 4$       **Answer: c)**  $f$  is an even function.

**Question 4:** Which one of the following statements is TRUE

- a)  $|xy| + |y|x = 1$  is symmetric with respect to the y-axis.      **FALSE**  
 b)  $y^2 = |y - x|$  is symmetric with respect to the y-axis.      **FALSE**  
 c)  $(xy)^2 - 2xy = 3$  is symmetric with respect to the origin.      **TRUE**  
 d)  $f(x) = \frac{x^4}{x^5 - x}$  is an even function.      **FALSE**  
 e)  $|y + 2| = x^4 - x^2 + 2$  is symmetric with respect to the x-axis.      **FALSE**

**Question 5:**

Let  $f$  be a function such that  $f(-1) = 3$  and  $f(2) = -4$ . The coordinate of two points on the graph of  $y = 3f(-x) - 2$  are

- (a) (1,1), (-2,-14)  
 (b) **(1,7), (-2,-14)**  
 (c) (1,7), (2,2)  
 (d) (-1,1), (2,6)  
 (e) (1,7), (2,4)