

# Linear vs Non-Linear Graphs

## Homework

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. Which is a linear equation?

- a.  $y = 2 - 5x$
- b.  $y = -5x^2$
- c.  $y = 2 - 5x^2$
- d.  $y = \frac{5}{x}$

2. Which is a linear equation?

- a.  $y = 3 - 2x$
- b.  $y = -7x^2$
- c.  $y = 2 - 3x^2$
- d.  $y = -7x^3$

3. Which of the following equations is *not* linear?

- a.  $13x - 12y = 82$
- b.  $-6x = y$
- c.  $7 = y$
- d.  $y = x^2 - 2$

4. Which of the following equations is *not* linear?

- a.  $y = x + 6$
- b.  $y = -8$
- c.  $y = 2x^2 - 1$
- d.  $y = 9x$

5. What type of function is  $y + 1 = 5x$ ? Explain.

- a. The function is linear because it can be written in the form  $y = mx + b$ :  $y = 5x - 1$
- b. The function is linear because it can be written in the form  $y = mx + b$ :  $y = 1x + 5$ .
- c. The function is NOT linear because it is not written in the form  $y = mx + b$ .
- d. The function is NOT linear because it is written in the form  $y + b = mx$ .

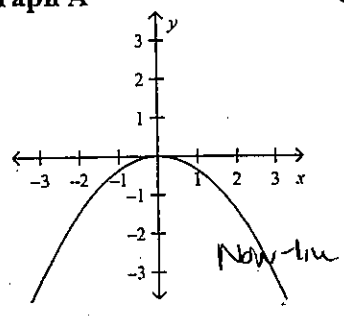
$$y + 1 = 5x$$

$$\underline{-1 - 1}$$

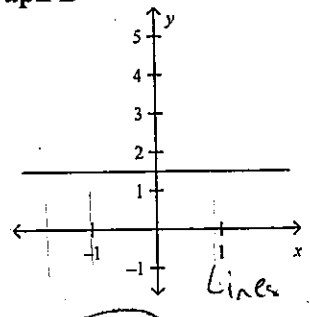
$$y = 5x - 1$$

6. Identify each graph as being a non-linear function, linear function, or not a function.

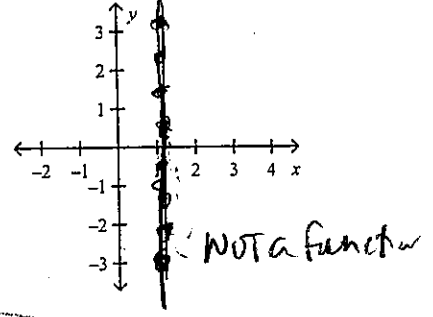
Graph A



Graph B



Graph C



- a. Graph A: not a function  
Graph B: not a function  
Graph C: linear function
- b. Graph A: non-linear function  
Graph B: linear function  
Graph C: linear function
- c. Graph A: non-linear function  
Graph B: linear function  
Graph C: not a function
- d. Graph A: non-linear function  
Graph B: not a function  
Graph C: not a function