

## Quiz 2.4: Linear Functions

**Multiple Choice:** Choose the letter that corresponds to the correct answer. Write the answer in your notebook.

1. A line that the graph of a function approaches but never intersects is called:  
 A. Asymptote                      B. Vertical line test              C. x-axis                      D. y-axis
2. A function whose graph is a slant line is called:  
 A. Linear Function              B. Linear Equation              C. Linear Inequality              D. Linear Inequation
3. The set of all permissible values of  $x$  that give real values for  $y$  is called:  
 A. Domain                      B. Function                      C. Range                      D. Relation
4. The set of permissible values for  $y$  or  $f(x)$  that give the values of  $x$  real numbers is called:  
 A. Domain                      B. Function                      C. Range                      D. Relation
5. Which of the following is a NOT linear function?

A. 

x	-3	-1	1	3	5
y	-16	-6	4	14	24

C. 

x	-2	-1	0	1	2
y	-1	2	5	8	11

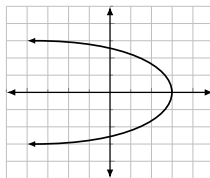
B. 

x	-5	-4	-3	-2	-1
y	15	11	7	3	-1

D. 

x	5	4	3	2	1
y	4	1	0	1	4

6. Which of the following functions has a degree of 0?  
 A.  $f(x) = -2x - 1$               B.  $f(x) = 2(x + 3)$               C.  $f(x) = 0$                       D.  $f(x) = -4$
7. Which of the following is NOT a linear function?  
 A.  $f(x) = -6x - 7$               B.  $f(x) = 2(x - 3)$               C.  $f(x) = -4x^2$                       D.  $f(x) = -4$
8. Which of the following functions has an undefined degree?  
 A.  $f(x) = -2x - 1$               B.  $f(x) = 2(x + 3)$               C.  $f(x) = 0$                       D.  $f(x) = -4$
9. If  $f(x) = 4x - 1$ , find  $f(-1)$ .  
 A.  $f(-1) = -4$                       B.  $f(-1) = -5$                       C.  $f(-1) = 4$                       D.  $f(-1) = 5$
10. What is the domain of the function  $g(x) = \sqrt{x + 1}$ ?  
 A.  $D = \{x|x \geq -1\}$               B.  $D = \{x|x \geq 0\}$                       C.  $D = \{x|x \geq 1\}$                       D.  $D = \{x|x \geq 2\}$
11. What are the domain and the range of the function shown in following graph?



- |   |   |
|---|---|
| <p>A. <math>D = \{x x &gt; 3\}, R = \{y y \in \mathbb{R}\}</math></p> <p>B. <math>D = \{x x \geq 3\}, R = \{y y \in \mathbb{R}\}</math></p> | <p>C. <math>D = \{x x &lt; 3\}, R = \{y y \in \mathbb{R}\}</math></p> <p>D. <math>D = \{x x \leq 3\}, R = \{y y \in \mathbb{R}\}</math></p> |
|---|---|

## Answer Key

1. A line that the graph of a function approaches but never intersects is called:

**Solution:**

- A. **Asymptote**      B. Vertical line test      C. x-axis      D. y-axis

2. A function whose graph is a slant line is called:

**Solution:**

- A. **Linear Function**      B. Linear Equation      C. Linear Inequality      D. Linear Inequation

3. The set of all permissible values of  $x$  that give real values for  $y$  is called:

**Solution:**

- A. **Domain**      B. Function      C. Range      D. Relation

4. The set of permissible values for  $y$  or  $f(x)$  that give the values of  $x$  real numbers is called:

**Solution:**

- A. Domain      B. Function      C. **Range**      D. Relation

5. Which of the following is a NOT linear function?

**Solution:**

A. 

x	-3	-1	1	3	5
y	-16	-6	4	14	24

C. 

x	-2	-1	0	1	2
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B. 

x	-5	-4	-3	-2	-1
y	15	11	7	3	-1

D. 

x	5	4	3	2	1
y	4	1	0	1	4

6. Which of the following functions has a degree of 0?

**Solution:**

- A.  $f(x) = -2x - 1$       B.  $f(x) = 2(x + 3)$       C.  $f(x) = 0$       D.  **$f(x) = -4$**

7. Which of the following is NOT a linear function?

**Solution:**

- A.  $f(x) = -6x - 7$       B.  $f(x) = 2(x - 3)$       C.  **$f(x) = -4x^2$**       D.  $f(x) = -4$

8. Which of the following functions has an undefined degree?

**Solution:**

- A.  $f(x) = -2x - 1$       B.  $f(x) = 2(x + 3)$       C.  **$f(x) = 0$**       D.  $f(x) = -4$

9. If  $f(x) = 4x - 1$ , find  $f(-1)$ .

**Solution:**

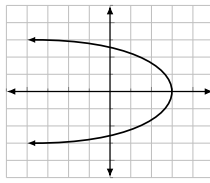
- A.  $f(-1) = -4$       B.  **$f(-1) = -5$**       C.  $f(-1) = 4$       D.  $f(-1) = 5$

10. What is the domain of the function  $g(x) = \sqrt{x + 1}$ ?

**Solution:**

- A.  **$D = \{x|x \geq -1\}$**       B.  $D = \{x|x \geq 0\}$       C.  $D = \{x|x \geq 1\}$       D.  $D = \{x|x \geq 2\}$

11. What are the domain and the range of the function shown in following graph?



**Solution:**

A.  $D = \{x|x > 3\}, R = \{y|y \in \mathbb{R}\}$

B.  $D = \{x|x \geq 3\}, R = \{y|y \in \mathbb{R}\}$

C.  $D = \{x|x < 3\}, R = \{y|y \in \mathbb{R}\}$

D.  $D = \{x|x \leq 3\}, R = \{y|y \in \mathbb{R}\}$