

## Worksheet 4: Linear Functions

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Instructions

- Read each question carefully
- Choose the best answer
- Circle the letter of your choice
- Only one answer per question

1. What is the general form of a linear function?

A)  $f(x) = ax^2 + bx + c$

B)  $f(x) = mx + b$

C)  $f(x) = a^x$

D)  $f(x) = \sqrt{x}$

2. In the equation  $f(x) = 3x + 2$ , what is the slope?

A) 3

B) 2

C) x

D) 5

3. In the equation  $f(x) = 3x + 2$ , what is the y-intercept?

A) 3

B) 2

C) x

D) 0

4. What does the slope of a linear function represent?

A) Where the line crosses the y-axis

B) The rate of change

C) The highest point

D) The x-intercept

5. A linear function with slope = 0 creates what type of line?

A) Vertical line

B) Horizontal line

C) Diagonal line going up

D) Diagonal line going down

6. Which equation represents a linear function with slope -2 and y-intercept 4?

A)  $f(x) = -2x + 4$

B)  $f(x) = 4x - 2$

C)  $f(x) = 2x + 4$

D)  $f(x) = -4x + 2$

7. If  $f(x) = -x + 1$ , what happens to  $y$  as  $x$  increases?

A)  $y$  increases

B)  $y$  decreases

C)  $y$  stays the same

D)  $y$  becomes zero

8. What is the rate of change for  $f(x) = 5x - 3$ ?

A)  $-3$

B)  $5$

C)  $x$

D)  $2$

9. Which function has the steepest slope?

A)  $f(x) = 2x + 1$

B)  $f(x) = 5x + 1$

C)  $f(x) = x + 1$

D)  $f(x) = 0.5x + 1$

10. If a phone plan costs \$30 plus \$0.05 per minute, which function represents the total cost?

A)  $f(x) = 30x + 0.05$

B)  $f(x) = 0.05x + 30$

C)  $f(x) = 30x + 5$

D)  $f(x) = 30 + 5x$