

Writing Linear Equations from Word Problems

Write an equation in slope-intercept form. Define your variables.

Use: $y = mx + b$ where m is the rate of change and b is the starting value.

Part A: Identify the Rate and Starting Value (Write the Equation)

1. A gym charges a \$15 sign-up fee and \$8 per month. Write an equation for the total cost y after x months.

2. A taxi charges \$4 to start the ride and \$2.50 per mile. Write an equation for the total cost y after x miles.

3. A babysitter charges \$12 just for showing up and \$14 per hour. Write an equation for earnings y after x hours.

4. A streaming service costs \$6 per month plus a one-time \$10 activation fee. Write an equation for total cost y after x months.

Part B: Choose the Variables (Write the Equation)

5. A plant is 9 inches tall and grows 1.5 inches each week. Let w be weeks and h be height. Write the equation.

6. You have \$75 saved and add \$20 each week. Let t be weeks and M be money. Write the equation.

7. The temperature is 62°F at noon and drops 3°F each hour. Let h be hours after noon and T be temperature. Write the equation.

8. A scuba diver starts 6 feet below sea level and descends 4 feet per minute. Write an equation for depth y after x minutes. (Below sea level can be negative.)

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Part A: Identify the Rate and Starting Value (Write the Equation)

1. A gym charges a \$15 sign-up fee and \$8 per month. Write an equation for the total cost y after x months.

$$y = 8x + 15$$

2. A taxi charges \$4 to start the ride and \$2.50 per mile. Write an equation for the total cost y after x miles.

$$y = 2.5x + 4$$

3. A babysitter charges \$12 just for showing up and \$14 per hour. Write an equation for earnings y after x hours.

$$y = 14x + 12$$

4. A streaming service costs \$6 per month plus a one-time \$10 activation fee. Write an equation for total cost y after x months.

$$y = 6x + 10$$

Part B: Choose the Variables (Write the Equation)

5. A plant is 9 inches tall and grows 1.5 inches each week. Let w be weeks and h be height. Write the equation.

$$h = 1.5w + 9$$

6. You have \$75 saved and add \$20 each week. Let t be weeks and M be money. Write the equation.

$$M = 20t + 75$$

7. The temperature is 62°F at noon and drops 3°F each hour. Let h be hours after noon and T be temperature. Write the equation.

$$T = -3h + 62$$

8. A scuba diver starts 6 feet below sea level and descends 4 feet per minute. Write an equation for depth y after x minutes. (Below sea level can be negative.)

$$y = -4x - 6$$
