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1. **Identify the independent and dependent variables.**  
 2. **Write a linear equation that models the situation.**  
 3. **Graph the equation.**  
 4. **Interpret the slope and y-intercept.**  
 5. **Use the equation to solve for the unknown.**

Example: A car starts at a speed of 0 miles per hour and accelerates to 60 miles per hour in 10 seconds. Write a linear equation that models the car's speed over time.

Solution: The independent variable is time (t) in seconds, and the dependent variable is speed (s) in miles per hour. The equation is  $s = 6t$ . The graph is a straight line passing through the origin (0,0) and (10,60). The slope is 6, representing the acceleration. The y-intercept is 0, representing the initial speed.

Example: A car starts at a speed of 60 miles per hour and decelerates to 0 miles per hour in 10 seconds. Write a linear equation that models the car's speed over time.

Solution: The independent variable is time (t) in seconds, and the dependent variable is speed (s) in miles per hour. The equation is  $s = -6t + 60$ . The graph is a straight line passing through the y-axis at (0,60) and the x-axis at (10,0). The slope is -6, representing the deceleration. The y-intercept is 60, representing the initial speed.

Example: A car starts at a speed of 0 miles per hour and accelerates to 60 miles per hour in 10 seconds. Write a linear equation that models the car's speed over time.

Solution: The independent variable is time (t) in seconds, and the dependent variable is speed (s) in miles per hour. The equation is  $s = 6t$ . The graph is a straight line passing through the origin (0,0) and (10,60). The slope is 6, representing the acceleration. The y-intercept is 0, representing the initial speed.

