Constant Of Proportionality Worksheet

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Part 1: Building a Foundation

What is the constant of proportionality in the equation y = 5x?

Hint: Identify the coefficient of x in the equation.

- ◯ A) 1
- ◯ B) 5
- ◯ C) x
- ◯ D) y

Which of the following statements are true about directly proportional relationships?

Hint: Consider the characteristics of the graph and the ratio.

- ☐ A) The graph is a straight line through the origin.
- ☐ B) The ratio y/x is constant.
- ☐ C) The line can have any slope.
- ☐ D) The graph can be a curve.

Explain in your own words what it means for two variables to be directly proportional.

Hint: Think about how one variable changes in relation to the other.

Identify the constant of proportionality and the dependent variable in the equation y = 3x.

Hint: Look for the coefficient of x and the variable that depends on x.

1. Constant of Proportionality:

2. Dependent Variable:

Part 2: Comprehension and Application

If the constant of proportionality is 7, what is the equation that represents the relationship between y and x?

Hint: Use the constant to form the equation.

- ◯ A) y = 7x
- ◯ B) y = x + 7
- ◯ C) y = x/7
- ◯ D) y = 7 + x

Which of the following graphs could represent a directly proportional relationship?

Hint: Look for characteristics of the graph that indicate direct proportionality.

- ☐ A) A line passing through (0,0) with a positive slope.
- ☐ B) A line passing through (0,0) with a negative slope.
- ☐ C) A horizontal line.
- ☐ D) A vertical line.

A recipe requires 3 cups of flour for every 2 cups of sugar. Write an equation representing the relationship between flour (f) and sugar (s).

Hint: Think about how to express the relationship mathematically.

If a car travels 60 miles in 1 hour, what is the constant of proportionality between distance and time?

Hint: Consider the relationship between distance and time.

- ◯ A) 30
- ◯ B) 60
- ◯ C) 1
- ◯ D) 120

Part 3: Analysis, Evaluation, and Creation

If the graph of a relationship between x and y is a straight line through the origin with a slope of 2, what is the constant of proportionality?

Hint: The slope of the line represents the constant of proportionality.

- ◯ A) 0
- ◯ B) 1
- ◯ C) 2
- ◯ D) 3

Which of the following scenarios can be modeled by a directly proportional relationship?

Hint: Think about relationships that maintain a constant ratio.

- ☐ A) The cost of apples is $2 per apple.
- ☐ B) The temperature in Celsius and Fahrenheit.
- ☐ C) The number of pages read and time spent reading at a constant speed.
- ☐ D) The height of a plant over time with varying growth rates.

Analyze the table below and determine if the relationship between x and y is directly proportional. Justify your answer.

Hint: Look for a constant ratio between x and y values.

Which statement best evaluates the relationship between the variables in the equation y = 10x?

Hint: Consider the definition of direct proportionality.

- ◯ A) y is inversely proportional to x.
- ◯ B) y is directly proportional to x with a constant of proportionality of 10.
- ◯ C) y is independent of x.
- ◯ D) y is directly proportional to x with a constant of proportionality of 1.

Create a scenario where the constant of proportionality is 5. Which of the following could be correct?

Hint: Think about situations that involve a constant rate.

- ☐ A) A taxi charges $5 per mile.
- ☐ B) A factory produces 5 widgets per hour.
- ☐ C) A book costs $5 each.
- ☐ D) A train travels 5 miles per hour.

Design a real-world problem involving a directly proportional relationship. Provide the equation and explain how you would solve it.

Hint: Think about a situation where two quantities are related by a constant ratio.