

Graphing Proportional Relationships Worksheet

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Part 1: Building a Foundation

What is the equation form of a proportional relationship?

Hint: Think about the basic forms of equations.

- A) $y = mx + b$
- B) $y = kx$
- C) $y = x + c$
- D) $y = kx + c$

What is the equation form of a proportional relationship?

Hint: Think about the different forms of equations you have learned.

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Which of the following are characteristics of a graph representing a proportional relationship?

Hint: Consider the properties of straight lines in graphs.

- A) The graph is a straight line.

- B) The graph passes through the origin.
- C) The graph has a slope of zero.
- D) The graph has a constant slope.

Which of the following are characteristics of a graph representing a proportional relationship?

Hint: Consider the properties of straight lines and their slopes.

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Explain what is meant by the 'constant of proportionality' in a proportional relationship.

Hint: Think about how the variables relate to each other.

Explain what is meant by the 'constant of proportionality' in a proportional relationship.

Hint: Think about how the two quantities relate to each other.

Explain what is meant by the 'constant of proportionality' in a proportional relationship.

Hint: Think about how one quantity changes in relation to another.

Part 2: Understanding and Interpretation

If a graph of a relationship does not pass through the origin, what can you conclude about the relationship?

Hint: Consider the definition of proportional relationships.

- A) It is proportional.
- B) It is not proportional.
- C) It has a constant of proportionality of zero.
- D) It has a negative slope.

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Which of the following tables of values represent a proportional relationship?

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

- A) $x: 1, 2, 3; y: 2, 4, 6$
- B) $x: 1, 2, 3; y: 3, 6, 9$
- C) $x: 1, 2, 3; y: 1, 3, 5$
- D) $x: 1, 2, 3; y: 2, 5, 8$

Which of the following tables of values represent a proportional relationship?

Hint: Look for consistent ratios between x and y values.

- A) $x: 1, 2, 3; y: 2, 4, 6$
- A) $x: 1, 2, 3; y: 3, 6, 9$
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Describe how you would determine the constant of proportionality from a graph.

Hint: Think about the relationship between the coordinates of points on the graph.

Describe how you would determine the constant of proportionality from a graph.

Hint: Think about the slope of the line.

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Hint: Think about the relationship between the coordinates of points on the graph.

Part 3: Application and Analysis

Given the equation $y = 5x$, what is the constant of proportionality?

Hint: Identify the coefficient of x in the equation.

- A) 1
- A) 5
- A) 0

- A) x

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If a car travels at a constant speed and the distance-time graph is a straight line through the origin, which of the following statements are true?

Hint: Consider the implications of a straight line graph.

- A) The speed is the constant of proportionality.
 B) The distance is directly proportional to time.
 C) The graph has a constant slope.
 D) The car's speed changes over time.

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A recipe calls for 3 cups of flour for every 2 cups of sugar. Write the equation representing the proportional relationship between flour and sugar.

Hint: Think about how to express the relationship mathematically.

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Part 4: Evaluation and Creation

If the slope of a proportional relationship graph is 3, what does this tell you about the relationship?

Hint: Consider how slope relates to changes in x and y .

- A) For every 1 unit increase in x , y increases by 3 units.
- B) For every 3 unit increase in x , y increases by 1 unit.
- C) The relationship is not proportional.
- D) The graph does not pass through the origin.

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Analyze the following scenarios and identify which ones describe a proportional relationship:

Hint: Look for constant ratios in the scenarios.

- A) The cost of apples is \$2 per apple.
- B) The temperature increases by 5 degrees every hour.
- C) The number of pages read increases by 10 for every hour spent reading.
- D) The speed of a car is constant at 60 mph.

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Which of the following statements best evaluates the nature of a proportional relationship?

Hint: Consider the defining characteristics of proportional relationships.

- A) It is a linear relationship with a non-zero y-intercept.
- A) It is a linear relationship with a constant slope and passes through the origin.
- A) It is a non-linear relationship with a constant ratio.
- A) It is a relationship where y is always greater than x.

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Create a scenario that represents a proportional relationship. Which of the following elements would you include?

Hint: Think about the key features of proportional relationships.

- A) A constant rate of change.

- A) A graph that passes through the origin.
- A) A variable y that is directly proportional to x .
- A) A changing slope.

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Design a real-world problem involving a proportional relationship and explain how you would solve it using a graph.

Hint: Consider how to represent the problem visually.

Design a real-world problem involving a proportional relationship and explain how you would solve it using a graph.

Hint: Think about how to set up the problem and what variables to include.

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Hint: Consider how to represent the problem visually.