

## Math Worksheets For 8th Graders

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### Part 1: Building a Foundation

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**What is the value of  $2^3$ ?**

*Hint: Think about the definition of exponentiation.*

- A) 6
- B) 8
- C) 9
- D) 12

**Which of the following are properties of a linear function?**

*Hint: Consider the characteristics of linear functions.*

- A) Constant rate of change
- B) Graph is a straight line
- C) Has a maximum point
- D) Can be represented by  $y = mx + b$

**Explain in your own words what the Pythagorean Theorem is and provide an example.**

*Hint: Think about right triangles and the relationship between the sides.*

**List the steps to solve a system of equations using the substitution method.**

*Hint: Consider how you can isolate a variable.*

1. Step 1

2. Step 2

3. Step 3

## Part 2: Comprehension and Application

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**Which transformation involves flipping a figure over a line?**

*Hint: Think about how a mirror image works.*

- A) Translation
- B) Rotation
- C) Reflection
- D) Dilation

**Which of the following are true about rational numbers?**

*Hint: Consider the definition of rational numbers.*

- A) They can be expressed as a fraction
- B) They include repeating decimals
- C) They are always positive
- D) They can be whole numbers

**If a triangle has sides of 3 cm, 4 cm, and 5 cm, what is the area of the triangle?**

*Hint: Use the formula for the area of a triangle.*

- A) 6 cm<sup>2</sup>
- B) 12 cm<sup>2</sup>
- C) 10 cm<sup>2</sup>
- D) 8 cm<sup>2</sup>

**You have a box of marbles with 5 red, 3 blue, and 2 green marbles. What is the probability of picking a red or blue marble?**

*Hint: Consider the total number of marbles.*

- A)  $1/2$
- B)  $4/5$
- C)  $8/10$
- D)  $2/5$

**Apply the Pythagorean Theorem to find the length of the hypotenuse of a right triangle with legs of 7 cm and 24 cm.**

*Hint: Use the formula  $\sqrt{a^2 + b^2 = c^2}$ .*

### Part 3: Analysis, Evaluation, and Creation

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**Which graph represents a function that is not linear?**

*Hint: Think about the shape of the graph.*

- A) A straight line
- B) A parabola
- C) A horizontal line
- D) A diagonal line

**Analyze the following statements and identify which are true about transformations:**

*Hint: Consider the effects of each transformation.*

- A) A dilation changes the size of a figure
- B) A rotation changes the orientation of a figure
- C) A translation changes the shape of a figure

- D) A reflection changes the size of a figure

**Which method would be most efficient for solving the system of equations:  $\{2x + 3y = 6\}$  and  $\{4x - y = 5\}$ ?**

*Hint: Consider the methods for solving systems of equations.*

- A) Graphing  
 B) Substitution  
 C) Elimination  
 D) Trial and error

**Create a real-world scenario where you would use the Pythagorean Theorem. Which of the following scenarios apply?**

*Hint: Think about situations involving right triangles.*

- A) Determining the height of a tree using a shadow  
 B) Calculating the distance between two points on a map  
 C) Finding the area of a rectangle  
 D) Designing a triangular garden plot

**Propose a method to teach the concept of linear functions to a peer who is struggling. Include examples and visual aids in your explanation.**

*Hint: Think about how you can simplify the concept.*