

## 7th Grade Math Worksheets Questions and Answers PDF

7th Grade Math Worksheets Questions And Answers PDF

*Disclaimer: The 7th grade math worksheets questions and answers pdf was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at [max@studyblaze.io](mailto:max@studyblaze.io).*

### Part 1: Building a Foundation

---

**What is the absolute value of -7?**

*Hint: Remember that absolute value represents the distance from zero.*

- 7
- 0
- 7 ✓
- 14

■ The absolute value of -7 is 7.

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

*Hint: Rational numbers can be expressed as a fraction.*

- $\frac{1}{2}$  ✓
- $\sqrt{2}$
- 0.75 ✓
- $\pi$

■ Rational numbers include  $\frac{1}{2}$  and 0.75.

**Explain what a ratio is and provide an example.**

*Hint: Think about how ratios compare two quantities.*

**A ratio is a comparison of two quantities, often expressed as a fraction. For example, the ratio of 2 apples to 3 oranges can be written as 2:3.**

**List the properties of a right triangle.**

*Hint: Consider the angles and sides of the triangle.*

1. What is the definition of a right triangle?

**A triangle with one angle measuring 90 degrees.**

2. What is the longest side of a right triangle called?

**The hypotenuse.**

3. What theorem is used to find the sides of a right triangle?

**The Pythagorean theorem.**

**A right triangle has one angle that is 90 degrees, the sides opposite the angles are called legs and hypotenuse, and it follows the Pythagorean theorem.**

**What is the greatest common factor (GCF) of 18 and 24?**

*Hint: Think about the factors of both numbers.*

2

- 3  
 6 ✓  
 12

■ The GCF of 18 and 24 is 6.

## Part 2: Understanding and Interpretation

---

**If the ratio of cats to dogs is 3:4, how many dogs are there if there are 9 cats?**

*Hint: Use the ratio to set up a proportion.*

- 3  
 6  
 12 ✓  
 15

■ If there are 9 cats, there are 12 dogs.

**Which of the following expressions are equivalent to  $3(x + 4)$ ?**

*Hint: Distribute the 3 to both terms inside the parentheses.*

- $3x + 12$  ✓  
  $3x + 4$   
  $12x + 3$   
  $3x + 4x$

■ The equivalent expression is  $3x + 12$ .

**Describe how to find the area of a circle and provide an example calculation with a radius of 5 units.**

*Hint: Use the formula  $A = \pi r^2$ .*

To find the area of a circle, use the formula  $A = \pi r^2$ . For a radius of 5, the area is  $25\pi$ .

### Part 3: Application and Analysis

---

A recipe requires  $\frac{2}{3}$  cup of sugar. If you want to make half of the recipe, how much sugar do you need?

Hint: Think about dividing the amount by 2.

- $\frac{1}{3}$  cup ✓
- $\frac{1}{2}$  cup
- $\frac{1}{4}$  cup
- $\frac{1}{6}$  cup

You need  $\frac{1}{3}$  cup of sugar.

You have a rectangle with a length of 8 cm and a width of 3 cm. Which of the following are correct calculations?

Hint: Use the formulas for area and perimeter.

- Area =  $24 \text{ cm}^2$  ✓
- Perimeter =  $22 \text{ cm}$  ✓
- Area =  $11 \text{ cm}^2$
- Perimeter =  $16 \text{ cm}$

The correct area is  $24 \text{ cm}^2$  and the correct perimeter is  $22 \text{ cm}$ .

Write an equation to represent the following situation: "Three times a number decreased by 5 is equal to 16." Solve for the number.

Hint: Set up the equation and isolate the variable.

| The equation is  $3x - 5 = 16$ . Solving gives  $x = 7$ .

## Part 4: Evaluation and Creation

---

Which of the following graphs represents a proportional relationship?

*Hint: Consider the characteristics of proportional relationships.*

- A straight line through the origin ✓
- A parabola
- A horizontal line
- A vertical line

| A straight line through the origin represents a proportional relationship.

Analyze the following data set: 5, 7, 7, 10, 12. Which of the following statements are true?

*Hint: Calculate the mean, median, mode, and range.*

- The mean is 8.2 ✓
- The median is 7 ✓
- The mode is 7 ✓
- The range is 7

| The true statements are that the median is 7, the mode is 7, and the mean is 8.2.

Analyze the relationship between the circumference and diameter of a circle. What is the constant of proportionality, and how is it used?

*Hint: Consider the formula for circumference.*

| The constant of proportionality is  $\pi$ , which relates the circumference to the diameter as  $C = \pi D$ .

**Which of the following scenarios best represents a situation where the least common multiple (LCM) is used?**

*Hint: Think about events that repeat over time.*

- Dividing a pizza equally among friends
- Scheduling two events that repeat every 4 and 6 days ✓**
- Finding the average of test scores
- Calculating the perimeter of a rectangle

■ Scheduling two events that repeat every 4 and 6 days represents a situation where LCM is used.

**Evaluate the following statements about solving inequalities. Which are true?**

*Hint: Consider the rules for manipulating inequalities.*

- Adding the same number to both sides maintains the inequality ✓**
- Multiplying both sides by a negative number reverses the inequality ✓**
- Subtractin the same number from both sides reverses the inequality
- Dividing both sides by a positive number maintains the inequality ✓**

■ The true statements are that adding the same number to both sides maintains the inequality, multiplying by a negative reverses it, and dividing by a positive maintains it.

**Create a real-world problem involving a proportion and solve it. Describe the steps you took to solve the problem.**

*Hint: Think about situations where proportions are used.*

■ **A real-world problem could involve mixing ingredients in a recipe. The steps include identifying the ratio and calculating the amounts needed.**