

Class 7 - Mathematics

Ganita Prakash

Working with Fractions

CBSE NOTES

Working with Fractions - Practice Worksheet

Strengthen your foundation with key concepts and basic applications.



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Solve the following questions. Write your answers in the space provided.

1. Define the multiplication of fractions and explain the process involved with an example.

Hint: Break down the multiplication into steps for clarity.

2. How can you explain to a classmate how to find the distance walked by Aaron in $\frac{2}{5}$ hours?

Hint: Consider first finding the distance for a smaller fraction before multiplying.



Solve the following questions. Write your answers in the space provided.

3. Explain the significance of converting mixed numbers to improper fractions using the example of $1 \frac{1}{4}$ hours.

Hint: Recall how to convert a mixed number based on its components.

4. A farmer distributed $\frac{2}{3}$ acre of land to each of his 5 grandchildren. Calculate the total land given and explain your reasoning.

Hint: Use the multiplication rule for fractions to solve.



Solve the following questions. Write your answers in the space provided.

5. Discuss how to calculate the cost of $1\frac{1}{4}$ hours of internet time if 1 hour costs ₹8.

Hint: Think about the cost per hour to help in calculating.

6. What does it mean to divide fractions? Illustrate with the example of dividing $\frac{1}{2}$ by $\frac{1}{3}$.

Hint: Recall the reciprocal concept when dividing fractions.



Solve the following questions. Write your answers in the space provided.

7. Generate a real-world scenario for multiplying a fraction by a whole number.

Hint: Consider quantities in recipes or projects for practical applications.

8. Explain how to add two fractions with different denominators and provide an example.

Hint: Think of the Least Common Multiple (LCM) for finding common denominators.



Solve the following questions. Write your answers in the space provided.

9. Introduce the concept of reciprocals and demonstrate with an example.

Hint: Remember that flipping the fraction creates its reciprocal.

10. Describe a method for simplifying fractions and why it is important.

Hint: Find the GCD first to aid in simplification.



Check your answers with the solutions below.

1. Define the multiplication of fractions and explain the process involved with an example.

Solution: Multiplying fractions involves taking the product of the numerators and the product of the denominators. For example, to find $\frac{2}{3} \times \frac{3}{4}$, multiply $2 \times 3 = 6$ (numerators) and $3 \times 4 = 12$ (denominators), yielding $\frac{6}{12}$, which simplifies to $\frac{1}{2}$. This method provides a systematic approach to fraction multiplication.

2. How can you explain to a classmate how to find the distance walked by Aaron in $\frac{2}{5}$ hours?

Solution: To find the distance walked by Aaron in $\frac{2}{5}$ hours, start by noting he walks 3 km in 1 hour. Calculate the distance for $\frac{1}{5}$ hour: $\frac{3}{5}$ km. Then for $\frac{2}{5}$ hours, multiply by 2: $2 \times \frac{3}{5} = \frac{6}{5}$ km. Thus, Aaron walks $\frac{6}{5}$ km, or $1 \frac{1}{5}$ km.

3. Explain the significance of converting mixed numbers to improper fractions using the example of $1 \frac{1}{4}$ hours.

Solution: Converting mixed numbers helps simplify calculations in fraction multiplication. For $1 \frac{1}{4}$ hours, convert it to an improper fraction: $1 \times 4 + 1 = \frac{5}{4}$. This is used to compute cost by multiplying against the rate. Understanding this process aids in effectively handling fractional calculations.

4. A farmer distributed $\frac{2}{3}$ acre of land to each of his 5 grandchildren. Calculate the total land given and explain your reasoning.

Solution: Total land = $5 \times \frac{2}{3} = \frac{10}{3}$ acres. This means the farmer gave each grandchild $\frac{2}{3}$ acre, and by multiplying with the number of grandchildren, you utilize the multiplication of fractions method. This total is an improper fraction, which can be interpreted in whole parts.



Check your answers with the solutions below.

5. Discuss how to calculate the cost of 1 $\frac{1}{4}$ hours of internet time if 1 hour costs ₹8.

Solution: First convert 1 $\frac{1}{4}$ to $\frac{5}{4}$. The cost is then calculated as $(\frac{5}{4}) \times 8 = 5 \times 2 = ₹10$. Understanding the conversion of mixed numbers streamlines multiplication and cost calculations, providing practical knowledge.

6. What does it mean to divide fractions? Illustrate with the example of dividing $\frac{1}{2}$ by $\frac{1}{3}$.

Solution: Dividing fractions involves multiplying by the reciprocal. To divide $\frac{1}{2}$ by $\frac{1}{3}$, multiply $\frac{1}{2}$ by $\frac{3}{1}$: $(1 \times 3)/(2 \times 1) = \frac{3}{2}$. This result indicates how many halves fit into a third. It's crucial for understanding relative sizes of fractions.

7. Generate a real-world scenario for multiplying a fraction by a whole number.

Solution: For instance, if a chef uses $\frac{3}{4}$ of a cup of sugar for one batch of cookies and makes 5 batches, the total sugar used is $5 \times \frac{3}{4} = \frac{15}{4}$ cups, or 3 $\frac{3}{4}$ cups. This real-world application exemplifies the practical usage of multiplying fractions, aiding comprehension.

8. Explain how to add two fractions with different denominators and provide an example.

Solution: To add fractions like $\frac{1}{4}$ and $\frac{1}{3}$, you must find a common denominator, which is 12 in this case. Convert them: $\frac{1}{4} = \frac{3}{12}$ and $\frac{1}{3} = \frac{4}{12}$, leading to $\frac{3}{12} + \frac{4}{12} = \frac{7}{12}$. This approach emphasizes why a common denominator is necessary for addition.



Check your answers with the solutions below.

9. Introduce the concept of reciprocals and demonstrate with an example.

Solution: The reciprocal of a number is 1 divided by that number. For example, the reciprocal of $\frac{2}{5}$ is $\frac{5}{2}$. This concept is crucial when dividing fractions, as understanding how to form and use reciprocals facilitates many operations involving fractions.

10. Describe a method for simplifying fractions and why it is important.

Solution: Simplifying fractions involves dividing both the numerator and denominator by their greatest common divisor (GCD). For $\frac{8}{12}$, both can be divided by 4, simplifying it to $\frac{2}{3}$. Simplification makes calculations easier and is essential for providing clean, understandable answers.



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