Multiplying Fractions by Whole Numbers

Grade 5 Math • Section 5.2

Name: _____	Date: _____	Score: _____ / 17

Quick Review and Helpful Hints

Rule: whole number $\times \frac{a}{b} = \frac{\text{whole number} \times a}{b}$.

Think of it as repeated addition: $3 \times \frac{2}{5} = \frac{2}{5} + \frac{2}{5} + \frac{2}{5} = \frac{6}{5} = 1\frac{1}{5}$.

Simplify your final answer (convert improper fractions to mixed numbers).

Example: Find $4 \times \frac{3}{8}$.

Multiply the numerator by the whole number: $\frac{4\times3}{8} = \frac{12}{8}$. Simplify: $\frac{12}{8} = \frac{3}{2} = 1\frac{1}{2}$.

Answer: $1\frac{1}{2}$

Practice Problems

Multiply. Write your answer in simplest form.

1. $3 \times \frac{1}{4} =$ _____
2. $5 \times \frac{2}{3} =$ _____
3. $6 \times \frac{3}{8} =$ _____
4. $4 \times \frac{5}{6} =$ _____
5. $7 \times \frac{1}{2} =$ _____
6. $2 \times \frac{4}{9} =$ _____
7. $8 \times \frac{3}{10} =$ _____
8. $9 \times \frac{2}{5} =$ _____
9. $5 \times \frac{7}{12} =$ _____
10. $10 \times \frac{3}{4} =$ _____
11. $12 \times \frac{5}{6} =$ _____
12. $3 \times \frac{5}{8} =$ _____
13. $6 \times \frac{2}{7} =$ _____
14. $4 \times \frac{7}{10} =$ _____
15. $8 \times \frac{5}{12} =$ _____

Word Problems

16. A painter uses $\frac{3}{4}$ gallon of paint per room. How much paint is needed for 6 rooms?

_____

17. Each serving of trail mix is $\frac{2}{3}$ cup. How many cups are needed for 9 servings?

_____

Answer Keys

1. $\frac{3}{4}$
2. $3\frac{1}{3}$
3. $2\frac{1}{4}$
4. $3\frac{1}{3}$
5. $3\frac{1}{2}$
6. $\frac{8}{9}$
7. $2\frac{2}{5}$
8. $3\frac{3}{5}$
9. $2\frac{11}{12}$
10. $7\frac{1}{2}$
11. 10
12. $1\frac{7}{8}$
13. $1\frac{5}{7}$
14. $2\frac{4}{5}$
15. $3\frac{1}{3}$
16. $4\frac{1}{2}$
17. 6

Step-by-Step Explanations

1. Start with the main idea. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $\frac{3}{4}$. Fractions are easier to combine when the pieces are the same size.

2. Keep the work tidy. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $3\frac{1}{3}$. Always simplify at the end so the answer is clean and useful.

3. Look at what the numbers mean. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $2\frac{1}{4}$. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

4. Use the setup first. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $3\frac{1}{3}$. Fractions are easier to combine when the pieces are the same size.

5. Check the size of the answer. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $3\frac{1}{2}$. Always simplify at the end so the answer is clean and useful.

6. Match the operation to the words. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $\frac{8}{9}$. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

7. Write the important values first. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $2\frac{2}{5}$. Fractions are easier to combine when the pieces are the same size.

8. Follow the pattern carefully. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $3\frac{3}{5}$. Always simplify at the end so the answer is clean and useful.

9. Start with the main idea. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $2\frac{11}{12}$. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

10. Keep the work tidy. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $7\frac{1}{2}$. Fractions are easier to combine when the pieces are the same size.

11. Look at what the numbers mean. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is 10. Always simplify at the end so the answer is clean and useful.

12. Use the setup first. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $1\frac{7}{8}$. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

13. Check the size of the answer. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $1\frac{5}{7}$. Fractions are easier to combine when the pieces are the same size.

14. Match the operation to the words. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $2\frac{4}{5}$. Always simplify at the end so the answer is clean and useful.

15. Write the important values first. For multiplying fractions by whole numbers, multiply the numerators and denominators, then simplify. The result is $3\frac{1}{3}$. For mixed numbers, converting to improper fractions can make the arithmetic calmer.

16. Follow the pattern carefully. For multiplying fractions by whole numbers, $6 \times \frac{3}{4} = \frac{18}{4} = 4\frac{1}{2}$ gallons. Fractions are easier to combine when the pieces are the same size.

17. Start with the main idea. For multiplying fractions by whole numbers, $9 \times \frac{2}{3} = \frac{18}{3} = 6$ cups. Always simplify at the end so the answer is clean and useful.

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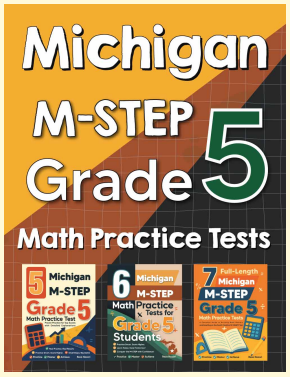

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