Multiplying Fractions by Whole Numbers

Spot mistakes, reason, and work backward

Name _____ **Date** _____ **Score** _____ / 8

QUICK REVIEW

A whole number times a fraction means equal groups: $3 \times \frac{2}{5} = \frac{2}{5} + \frac{2}{5} + \frac{2}{5} = \frac{6}{5} = 1\frac{1}{5}$. Multiply the numerator by the group count; do not multiply the denominator.

Worked example

Find $4 \times \frac{3}{8}$ using equal groups.

1. 4 equal groups give $\frac{3}{8} + \frac{3}{8} + \frac{3}{8} + \frac{3}{8}$.
2. The numerator count is $4 \times 3 = 12$, so the product is $\frac{12}{8}$.
3. $\frac{12}{8} = 1\frac{1}{2}$; dividing the total by 4 gives $\frac{3}{8}$ per group.
Answer: $1\frac{1}{2}$.

Practice Problems

Show your thinking.

1. Combine six groups each equal to $\frac{2}{9}$.

2. Find the total numerator in $3 \times \frac{5}{12}$ and rename the result.

3. Use a repeated sum to verify $4 \times \frac{7}{10}$.

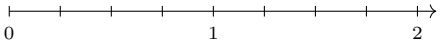
4. Find five equal copies of $\frac{2}{3}$, including any whole units.

5. A child says $5 \times \frac{3}{10} = \frac{8}{10}$ by adding $5 + 3$. Repair the calculation.

6. Find k if $k \times \frac{2}{5} = \frac{8}{5}$.

7. Four equal fractions total $\frac{12}{7}$. What is each fraction?

8. Draw three jumps of $\frac{2}{4}$ on the blank line. Label the endpoint.



Answer Key

1. $1\frac{1}{3}$.
2. Total numerator 15; $\frac{15}{12} = 1\frac{1}{4}$.
3. $\frac{7}{10} + \frac{7}{10} + \frac{7}{10} + \frac{7}{10} = 2\frac{8}{10} = 2\frac{4}{5}$.
4. $3\frac{1}{3}$.
5. $\frac{15}{10} = 1\frac{1}{2}$.
6. 4.
7. $\frac{3}{7}$.
8. $\frac{6}{4} = 1\frac{1}{2}$.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. 6 equal groups give $\frac{2}{9} + \frac{2}{9} + \frac{2}{9} + \frac{2}{9} + \frac{2}{9} + \frac{2}{9}$.
2. The numerator count is $6 \times 2 = 12$, so the product is $\frac{12}{9}$.
3. $\frac{12}{9} = 1\frac{1}{3}$; dividing the total by 6 gives $\frac{2}{9}$ per group.

Problem 2

1. 3 equal groups give $\frac{5}{12} + \frac{5}{12} + \frac{5}{12}$.
2. The numerator count is $3 \times 5 = 15$, so the product is $\frac{15}{12}$.
3. $\frac{15}{12} = 1\frac{1}{4}$; dividing the total by 3 gives $\frac{5}{12}$ per group.

Problem 3

1. 4 equal groups give $\frac{7}{10} + \frac{7}{10} + \frac{7}{10} + \frac{7}{10}$.
2. The numerator count is $4 \times 7 = 28$, so the product is $\frac{28}{10}$.
3. $\frac{28}{10} = 2\frac{4}{5}$; dividing the total by 4 gives $\frac{7}{10}$ per group.

Problem 4

1. 5 equal groups give $\frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3} + \frac{2}{3}$.
2. The numerator count is $5 \times 2 = 10$, so the product is $\frac{10}{3}$.
3. $\frac{10}{3} = 3\frac{1}{3}$; dividing the total by 5 gives $\frac{2}{3}$ per group.

Problem 5

1. Five groups each contain 3 tenths.
2. The numerator is $5 \times 3 = 15$, not $5 + 3 = 8$.
3. $\frac{15}{10} = 1\frac{1}{2}$.

Problem 6

1. The target contains 8 fifths.
2. Each group has 2 fifths, so $8 \div 2 = 4$.
3. $4 \times \frac{2}{5} = \frac{8}{5}$ checks $k = 4$.

Problem 7

1. The total has 12 seventh-sized pieces.
2. $12 \div 4 = 3$ pieces belong in each group.
3. $4 \times \frac{3}{7} = \frac{12}{7}$ checks the share.

Problem 8

1. Each jump spans 2 quarter-sized intervals.
2. Three jumps span $3 \times 2 = 6$ intervals.
3. The endpoint is $\frac{6}{4} = 1\frac{1}{2}$.

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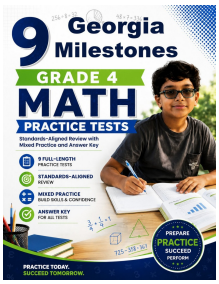

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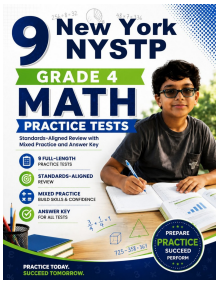

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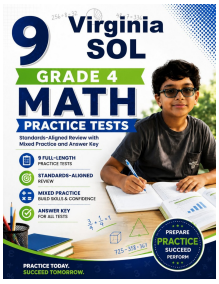

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