Dividing Whole Numbers by Unit Fractions

Dividing Whole Numbers by Unit Fractions: Find, Fix, and Work Backward

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

Dividing a whole number by a unit fraction counts small groups. If one whole has 7 sevenths, multiply the number of wholes by 7 to count the portions. The answer counts portions; it is not the size of a portion.

Worked example

Compute $4 \div \frac{1}{7}$. Explain whether the answer counts groups or gives one share.

1. Each whole has 7 equal portions of $\frac{1}{7}$.
2. 4 wholes contain $4 \times 7 = 28$ portions.
3. Check: $28 \times \frac{1}{7} = 4$.
Answer: 28.

Practice Problems

Show your thinking.

1. A student replaces division by multiplication and writes $5 \div \frac{1}{3} = \frac{5}{3}$. Correct the model and result.

2. Find the missing unit-fraction divisor: $3 \div \square = 12$.

3. Find the starting amount: $\square \div \frac{1}{7} = 14$. Use multiplication to check.

4. Compare $4 \div \frac{1}{5}$ with $4 \div \frac{1}{10}$. Which quotient is larger? Explain using the number or size of equal parts.

5. A student replaces division by multiplication and writes $2 \div \frac{1}{9} = \frac{2}{9}$. Correct the model and result.

6. Find the missing unit-fraction divisor: $7 \div \square = 14$.

Answer Key

1. 15.
2. $\frac{1}{4}$.
3. 2.
4. First 20; second 40; second is larger.
5. 18.
6. $\frac{1}{2}$.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Each whole has 3 equal portions of $\frac{1}{3}$.
2. 5 wholes contain $5 \times 3 = 15$ portions.
3. Check: $15 \times \frac{1}{3} = 5$.

Problem 2

1. Portion size is total divided by portion count: $3 \div 12 = \frac{3}{12} = \frac{1}{4}$.
2. Each whole has 4 equal portions of $\frac{1}{4}$.
3. 3 wholes contain $3 \times 4 = 12$ portions.
4. Check: $12 \times \frac{1}{4} = 3$.

Problem 3

1. Undo division by multiplying quotient and divisor: $14 \times \frac{1}{7} = 2$ starting units.
2. Each whole has 7 equal portions of $\frac{1}{7}$.
3. 2 wholes contain $2 \times 7 = 14$ portions.
4. Check: $14 \times \frac{1}{7} = 2$.

Problem 4

1. Each whole has 5 equal portions of $\frac{1}{5}$.
2. 4 wholes contain $4 \times 5 = 20$ portions.
3. Check: $20 \times \frac{1}{5} = 4$.
4. The changed divisor gives $4 \div \frac{1}{10} = 40$; smaller portions make more groups.

Problem 5

1. Each whole has 9 equal portions of $\frac{1}{9}$.
2. 2 wholes contain $2 \times 9 = 18$ portions.
3. Check: $18 \times \frac{1}{9} = 2$.

Problem 6

1. Portion size is total divided by portion count: $7 \div 14 = \frac{7}{14} = \frac{1}{2}$.
2. Each whole has 2 equal portions of $\frac{1}{2}$.
3. 7 wholes contain $7 \times 2 = 14$ portions.
4. Check: $14 \times \frac{1}{2} = 7$.

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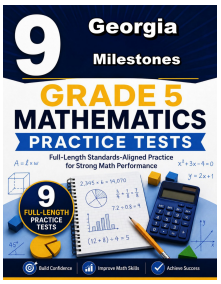

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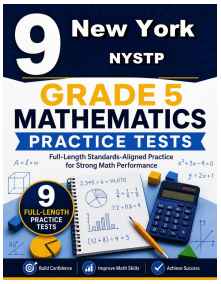

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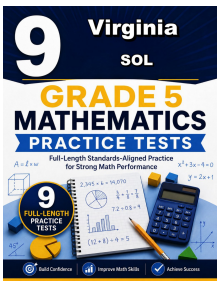

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