Fractions as Multiples of Unit Fractions

Spot mistakes, reason, and work backward

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

QUICK REVIEW

The numerator counts unit fractions: $\frac{5}{8} = 5 \times \frac{1}{8}$. The unit is $\frac{1}{8}$, not $\frac{1}{5}$. This expresses one fraction as a multiple of its own unit fraction.

Worked example

Express $\frac{9}{10}$ as a whole number times a unit fraction.

1. One equal part is $\frac{1}{10}$.
2. The amount contains 9 of these parts, so use multiplier 9.
3. Check: $9 \times \frac{1}{10} = \frac{9}{10}$.
Answer: $\frac{9}{10} = 9 \times \frac{1}{10}$.

Practice Problems

Show your thinking.

1. Rename $1\frac{3}{5}$ as a multiple of $\frac{1}{5}$.

2. Find k in $k \times \frac{1}{12} = \frac{9}{12}$.

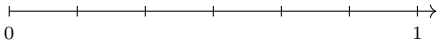
3. How many copies of $\frac{1}{4}$ are in $1\frac{3}{4}$? Write the product.

4. An unlabeled product has value $\frac{5}{9}$ and multiplier 5. Find its unit fraction.

5. A child writes $\frac{7}{10} = 10 \times \frac{1}{7}$. Repair both roles.

6. Find the denominator d if $4 \times \frac{1}{d} = \frac{4}{9}$.

7. Use the blank sixths line to mark five copies of $\frac{1}{6}$ from zero. Name the endpoint and product.



8. Can a proper fraction contain more unit pieces than its denominator? Explain using $\frac{7}{8}$ and $\frac{9}{8}$.

Answer Key

1. $\frac{8}{5} = 8 \times \frac{1}{5}$.
2. $\frac{9}{12} = 9 \times \frac{1}{12}$.
3. $\frac{7}{4} = 7 \times \frac{1}{4}$.
4. $\frac{5}{9} = 5 \times \frac{1}{9}$.
5. $\frac{7}{10} = 7 \times \frac{1}{10}$.
6. $d = 9$.
7. $\frac{5}{6} = 5 \times \frac{1}{6}$.
8. No; $\frac{7}{8}$ is proper, but $\frac{9}{8}$ is greater than one.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. One equal part is $\frac{1}{5}$.
2. The amount contains 8 of these parts, so use multiplier 8.
3. Check: $8 \times \frac{1}{5} = \frac{8}{5}$.

Problem 2

1. One equal part is $\frac{1}{12}$.
2. The amount contains 9 of these parts, so use multiplier 9.
3. Check: $9 \times \frac{1}{12} = \frac{9}{12}$.

Problem 3

1. One equal part is $\frac{1}{4}$.
2. The amount contains 7 of these parts, so use multiplier 7.
3. Check: $7 \times \frac{1}{4} = \frac{7}{4}$.

Problem 4

1. One equal part is $\frac{1}{9}$.
2. The amount contains 5 of these parts, so use multiplier 5.
3. Check: $5 \times \frac{1}{9} = \frac{5}{9}$.

Problem 5

1. The denominator 10 gives the unit $\frac{1}{10}$.
2. The numerator 7 gives the count of units.
3. $7 \times \frac{1}{10} = \frac{7}{10}$, whereas $10 \times \frac{1}{7} = \frac{10}{7}$.

Problem 6

1. The numerator 4 already matches the multiplier 4.
2. The unit must be $\frac{1}{9}$ to count ninths.
3. $4 \times \frac{1}{9} = \frac{4}{9}$ checks $d = 9$.

Problem 7

1. Each unit move spans one sixth.
2. Five moves reach tick 5, at $\frac{5}{6}$.
3. $5 \times \frac{1}{6} = \frac{5}{6}$ checks the location.

Problem 8

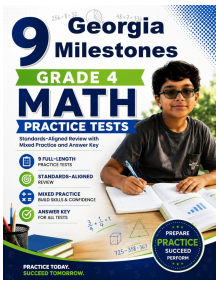
1. $\frac{7}{8} = 7 \times \frac{1}{8}$ uses fewer than 8 pieces.
2. $\frac{9}{8} = 9 \times \frac{1}{8}$ uses more than a whole of 8 pieces.
3. Thus a proper fraction needs numerator smaller than denominator.

TESTINAR

Keep Building Grade 4 Math Skills

Choose the practice book matched to your state assessment and turn worksheet practice into a complete test-prep plan.

All Grade 4 books



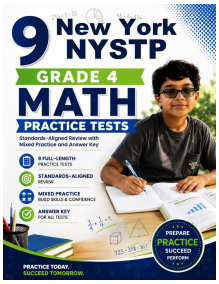
GEORGIA MILESTONES

9 Full-Length Math Practice Tests

Build Grade 4 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook



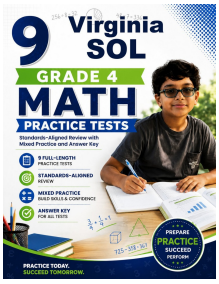
NEW YORK NYSTP

9 Full-Length Math Practice Tests

Build Grade 4 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook



VIRGINIA SOL

9 Full-Length Math Practice Tests

Build Grade 4 accuracy, confidence, and test stamina with 9 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 4 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/4