Generating Simple Equivalent Fractions

Spot mistakes, reason, and work backward

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

QUICK REVIEW

To generate an equivalent fraction, split each part the same way. For example, $\frac{3}{5} = \frac{3\times2}{5\times2} = \frac{6}{10}$. Both counts change, but the shaded amount stays the same.

Worked example

A quilt design colors $\frac{2}{4}$ of one panel. Split every part into 3 equal pieces. Draw the new divisions and name the colored fraction.



1. Add two dashed division marks inside each original part to make three equal smaller parts.
2. The whole now has $4 \times 3 = 12$ equal parts.
3. The colored part now has $2 \times 3 = 6$ small parts, so its new name is $\frac{6}{12}$.
Answer: $\frac{6}{12}$.

Practice Problems

Show your thinking.

1. Complete $\frac{1}{3} = \frac{2}{\square}$. Find the missing denominator.

2. Find the single multiplier that changes $\frac{1}{2}$ into $\frac{4}{8}$. Check it on both counts.

3. Complete $\frac{2}{3} = \frac{4}{\square}$. Find the missing denominator.

4. Fill the numerator: $\frac{1}{4} = \frac{\square}{8}$. Explain the piece counts.

5. Fill the numerator: $\frac{1}{2} = \frac{\square}{6}$. Explain the piece counts.

6. The strip has 10 equal small pieces, with 4 shaded. Join every 2 neighboring pieces into one larger part. Name the shaded fraction before and after grouping.



Answer Key

1. 6.
2. Multiply both counts by 4.
3. 6.
4. The numerator is 2.
5. The numerator is 3.
6. $\frac{4}{10} = \frac{2}{5}$.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The numerator changes by a factor of 2 because $1 \times 2 = 2$.
2. Use the same multiplier below: $3 \times 2 = 6$, giving $\frac{2}{6}$.

Problem 2

1. The numerator multiplier is $4 \div 1 = 4$.
2. The denominator uses the same multiplier: $8 \div 2 = 4$.

Thus the change generates an equivalent fraction.

Problem 3

1. The numerator changes by a factor of 2 because $2 \times 2 = 4$.
2. Use the same multiplier below: $3 \times 2 = 6$, giving $\frac{4}{6}$.

Problem 4

1. $4 \times 2 = 8$, so each original piece has been split into 2 pieces.
2. The shaded count becomes $1 \times 2 = 2$, giving $\frac{2}{8}$.

Problem 5

1. $2 \times 3 = 6$, so each original piece has been split into 3 pieces.
2. The shaded count becomes $1 \times 3 = 3$, giving $\frac{3}{6}$.

Problem 6

1. Grouping gives $10 \div 2 = 5$ larger equal parts in the whole.
2. The 4 shaded pieces make $4 \div 2 = 2$ larger parts. The shaded length does not change, so $\frac{4}{10} = \frac{2}{5}$.

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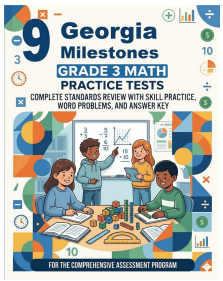

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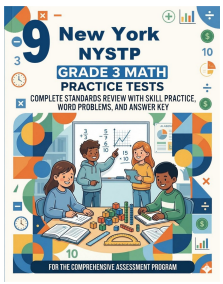

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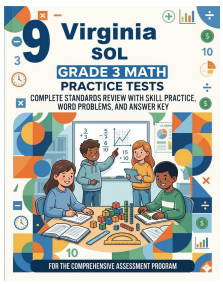

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