Generating Simple Equivalent Fractions

Explore ideas and representations

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. Generate a fraction equal to $\frac{1}{2}$ with denominator 4. Show the same multiplier twice.

2. Generate a fraction equal to $\frac{1}{3}$ with denominator 6. Show the same multiplier twice.

3. Generate two fractions equal to $\frac{2}{5}$: use multipliers 2 and 3.

4. Complete $\frac{1}{4} = \frac{2}{\square}$. Find the missing denominator.

5. Fill the numerator: $\frac{2}{3} = \frac{\square}{6}$. Explain the piece counts.

6. A student claims $\frac{3}{4} = \frac{7}{8}$. Use 8 equal parts to correct the numerator.



Answer Key

1. $\frac{2}{4}$.
2. $\frac{2}{6}$.
3. $\frac{4}{10}$ and $\frac{6}{15}$.
4. 8.
5. The numerator is 4.
6. $\frac{3}{4} = \frac{6}{8}$, not $\frac{7}{8}$.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Multiply the denominator by 2: $2 \times 2 = 4$.
2. Multiply the numerator by 2 too: $1 \times 2 = 2$, so $\frac{1}{2} = \frac{2}{4}$.

Problem 2

1. Multiply the denominator by 2: $3 \times 2 = 6$.
2. Multiply the numerator by 2 too: $1 \times 2 = 2$, so $\frac{1}{3} = \frac{2}{6}$.

Problem 3

1. Multiply both counts by 2: $2 \times 2 = 4$ and $5 \times 2 = 10$.
2. Multiply both by 3: $2 \times 3 = 6$ and $5 \times 3 = 15$. Both pairs preserve the same portion.

Problem 4

1. The numerator changes by a factor of 2 because $1 \times 2 = 2$.
2. Use the same multiplier below: $4 \times 2 = 8$, giving $\frac{2}{8}$.

Problem 5

1. $3 \times 2 = 6$, so each original piece has been split into 2 pieces.
2. The shaded count becomes $2 \times 2 = 4$, giving $\frac{4}{6}$.

Problem 6

1. Split each of 4 pieces into 2 parts; all $4 \times 2 = 8$ smaller parts cover the whole.
2. The shaded count must also multiply: $3 \times 2 = 6$, not 7.

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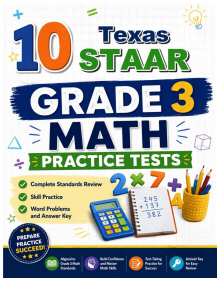

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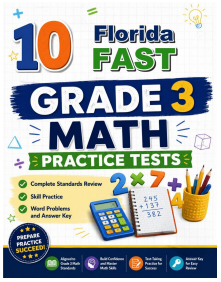

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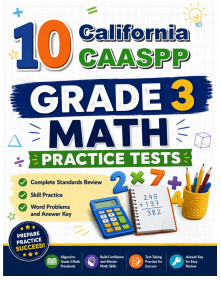

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