Equivalent Fractions as Same Size

Spot mistakes, reason, and work backward

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

QUICK REVIEW

Same size means the same amount of an equal-size whole, or the same number-line point. $\frac{1}{5}$ and $\frac{2}{10}$ cover the same length of equal strips. But half of a long ribbon need not equal half of a short ribbon. Check the whole first.

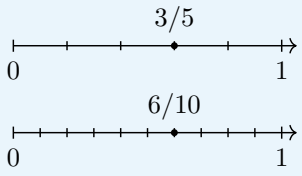
Worked example

Mark $\frac{3}{5}$ on the top line and $\frac{6}{10}$ on the bottom. Are they the same number?

1. 5-ths split into 2 equal smaller steps, making 10-ths.

2. The top endpoint after 3 steps matches the bottom endpoint after $3 \times 2 = 6$ steps.

Answer: Yes; $\frac{3}{5} = \frac{6}{10}$.

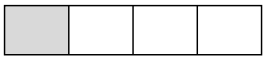


Practice Problems

Show your thinking.

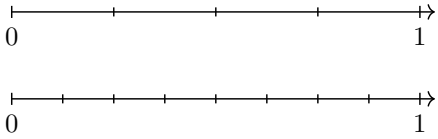
1. $\frac{2}{3}$ of a 6-cm ribbon and $\frac{4}{6}$ of a 12-cm ribbon are cut off. Are the cut lengths equal?

2. A student claims $\frac{1}{4} = \frac{3}{8}$. Use 8 equal parts to correct the numerator.



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

4. Mark $\frac{3}{4}$ on the top line and $\frac{6}{8}$ on the bottom. Are they the same number?



5. $\frac{1}{3}$ of a 6-cm ribbon and $\frac{2}{6}$ of a 12-cm ribbon are cut off. Are the cut lengths equal?

6. Two ribbons are each 8 cm long. Cut off $\frac{1}{2}$ of one and $\frac{2}{4}$ of the other. Compute both cut lengths to test whether the fractions name the same amount.

Answer Key

1. No; 4 cm and 8 cm.
2. $\frac{1}{4} = \frac{2}{8}$, not $\frac{3}{8}$.
3. The numerator is 3.
4. Yes; $\frac{3}{4} = \frac{6}{8}$.
5. No; 2 cm and 4 cm.
6. Both cuts are 4 cm.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The first ribbon has 3 pieces of 2 cm; 2 pieces measure $2 \times 2 = 4$ cm.

2. The second has 6 pieces of 2 cm; 4 measure $4 \times 2 = 8$ cm. Equivalent fractions need equal wholes to give equal lengths.

Problem 2

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: $1 \times 2 = 2$, not 3.

Problem 3

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 4

1. 4-ths split into 2 equal smaller steps, making 8-ths.

2. The top endpoint after 3 steps matches the bottom endpoint after $3 \times 2 = 6$ steps.

Problem 5

1. The first ribbon has 3 pieces of 2 cm; 1 pieces measure $1 \times 2 = 2$ cm.

2. The second has 6 pieces of 2 cm; 2 measure $2 \times 2 = 4$ cm. Equivalent fractions need equal wholes to give equal lengths.

Problem 6

1. In the first ribbon, one of 2 pieces is $8 \div 2 = 4$ cm; 1 pieces measure $1 \times 4 = 4$ cm.

2. In the second, one of 4 pieces is 2 cm; 2 pieces measure $2 \times 2 = 4$ cm. Same whole and same cut length show equivalence.

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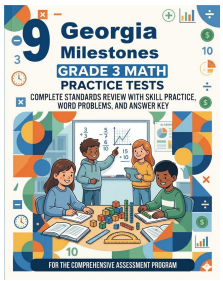

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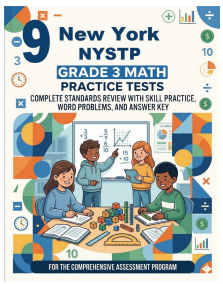

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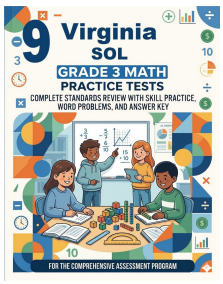

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