Comparing Fractions

Apply the skill to decisions and designs

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

QUICK REVIEW

Compare fractions of the same whole. Rename with a common denominator: $\frac{2}{3} = \frac{8}{12}$ and $\frac{3}{4} = \frac{9}{12}$, so $\frac{2}{3} < \frac{3}{4}$. With the same numerator, fewer equal pieces means larger pieces: $\frac{2}{5} > \frac{2}{8}$.

Worked example

Compare $\frac{4}{7}$ and $\frac{5}{6}$.

1. Rename the first fraction: $\frac{4}{7} = \frac{24}{42}$.

2. Rename the second: $\frac{5}{6} = \frac{35}{42}$.

3. The pieces now have equal size; $24 < 35$ gives the comparison.

Answer: $\frac{4}{7} < \frac{5}{6}$.

Practice Problems

Show your thinking.

1. Equal bottles are $\frac{5}{8}$ and $\frac{2}{3}$ full. Compare the filled fractions.

2. Two equal trails are $\frac{3}{4}$ and $\frac{7}{10}$ completed. Compare the completed shares.

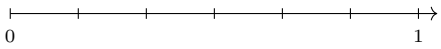
3. A tank is $\frac{4}{9}$ full. Is it below or above half full?

4. Compare $\frac{5}{6}$ m and $\frac{9}{12}$ m of ribbon.

5. A child says eating $\frac{1}{2}$ of a large pizza always gives the same amount as $\frac{1}{2}$ of a small pizza. Explain the problem.

6. Design a ribbon length in twelfths strictly longer than $\frac{2}{3}$ m but shorter than $\frac{5}{6}$ m.

7. Mark $\frac{2}{3}$ and $\frac{5}{6}$ on the sixths line for equal race distances. Which distance is farther?



8. Equal bags are filled to $\frac{3}{4}$, $\frac{5}{8}$, $\frac{7}{10}$. Which is fullest?

Answer Key

1. $\frac{5}{8} < \frac{2}{3}$.
2. $\frac{3}{4} > \frac{7}{10}$.
3. $\frac{4}{9} < \frac{1}{2}$.
4. $\frac{5}{6} > \frac{9}{12}$.
5. Equal fractions do not mean equal amounts when the wholes differ.
6. $\frac{9}{12}$ m.
7. $\frac{5}{6}$ is farther by $\frac{1}{6}$.
8. The $\frac{3}{4}$ bag.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Rename the first fraction: $\frac{5}{8} = \frac{15}{24}$.
2. Rename the second: $\frac{2}{3} = \frac{16}{24}$.
3. The pieces now have equal size; $15 < 16$ gives the comparison.

Problem 2

1. Rename the first fraction: $\frac{3}{4} = \frac{15}{20}$.
2. Rename the second: $\frac{7}{10} = \frac{14}{20}$.
3. The pieces now have equal size; $15 > 14$ gives the comparison.

Problem 3

1. Rename the first fraction: $\frac{4}{9} = \frac{8}{18}$.
2. Rename the second: $\frac{1}{2} = \frac{9}{18}$.
3. The pieces now have equal size; $8 < 9$ gives the comparison.

Problem 4

1. Rename the first fraction: $\frac{5}{6} = \frac{10}{12}$.
2. Rename the second: $\frac{9}{12} = \frac{9}{12}$.
3. The pieces now have equal size; $10 > 9$ gives the comparison.

Problem 5

1. For example, half of a 12-slice equal-slice pizza is 6 slices.
2. Half of an 8-slice pizza with that same slice size is 4 slices.
3. $6 > 4$; the whole sizes must be the same to compare by fraction alone.

Problem 6

1. $\frac{2}{3} = \frac{8}{12}$ and $\frac{5}{6} = \frac{10}{12}$.
2. The only whole numerator between 8 and 10 is 9.
3. $\frac{8}{12} < \frac{9}{12} < \frac{10}{12}$ checks the design.

Problem 7

1. $\frac{2}{3} = \frac{4}{6}$, so use the fourth tick.
2. $\frac{5}{6}$ uses the fifth tick.
3. $\frac{5}{6} - \frac{4}{6} = \frac{1}{6}$ farther.

Problem 8

1. In fortieths the amounts are $\frac{30}{40}, \frac{25}{40}, \frac{28}{40}$.
2. 30 is the largest numerator.
3. Thus $\frac{3}{4} > \frac{7}{10} > \frac{5}{8}$.

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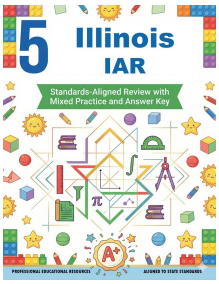

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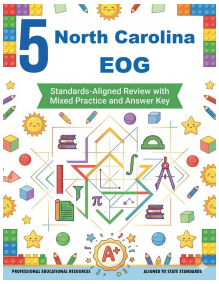

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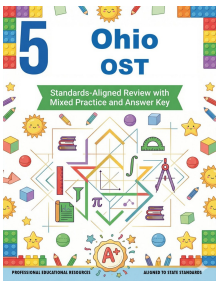

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