Lesson 15: Common Denominators to Compare

- Let's compare fractions by writing equivalent fractions with the same denominator.

Warm-up: What Do You Know about 15 and 30?

What do you know about 15 and 30?

15.1: Tricky Fractions?

1. In each pair of fractions, which fraction is greater? Explain or show your reasoning.

   a. $\frac{4}{3}$ or $\frac{13}{12}$

   b. $\frac{4}{3}$ or $\frac{7}{5}$

2. Han says he can compare $\frac{4}{3}$ and $\frac{13}{12}$ by writing an equivalent fraction for $\frac{4}{3}$. He says he can't use that strategy to compare $\frac{4}{3}$ and $\frac{7}{5}$. Do you agree? Explain your reasoning.

3. Priya and Lin showed different ways for comparing $\frac{4}{3}$ and $\frac{7}{5}$. Make sense of what they did. How are their strategies alike? How are they different?

   Priya: $\frac{4 \times 5}{3 \times 5} = \frac{20}{15}$ $\frac{7 \times 3}{5 \times 3} = \frac{21}{15}$

   $\frac{21}{15}$ is greater than $\frac{20}{15}$, so $\frac{7}{5}$ is greater than $\frac{4}{3}$.

   Lin: $\frac{4 \times 10}{3 \times 10} = \frac{40}{30}$ $\frac{7 \times 6}{5 \times 6} = \frac{42}{30}$

   $\frac{42}{30}$ is greater than $\frac{40}{30}$, so $\frac{7}{5}$ is greater than $\frac{4}{3}$.

15.2: Use a Common Denominator, or Not

1. For each pair of fractions, write a pair of equivalent fractions with a common denominator.

   a. $\frac{5}{6}$ and $\frac{3}{4}$

   b. $\frac{2}{3}$ and $\frac{5}{8}$

   c. $\frac{2}{6}$ and $\frac{4}{10}$

   d. $\frac{7}{4}$ and $\frac{17}{10}$

2. For each pair of fractions, decide which fraction is greater. Be prepared to explain your reasoning.

   a. $\frac{5}{12}$ or $\frac{3}{8}$

   b. $\frac{13}{5}$ or $\frac{11}{6}$

   c. $\frac{71}{10}$ or $\frac{34}{5}$

   d. $\frac{7}{12}$ or $\frac{49}{100}$