

Compare and Order

Rule 1: If the fractions have the same denominator but different numerators then the fraction with the greater numerator is the greater fraction.

Example 1: Compare $\frac{5}{12}$; $\frac{7}{12}$

The denominators are the same. So we look at the numerators. $7 > 5$

$$\rightarrow \frac{7}{12} > \frac{5}{12} \quad \text{or}$$

$$\frac{5}{12} < \frac{7}{12}.$$

Rule 2: If the fractions have the same numerators but different denominators the the fraction with the **smaller** denominator is the **greater** fraction.

Example 2: Compare $\frac{7}{11}$ and $\frac{7}{18}$

The numerators are the same. So, we look at the denominators.

$$18 > 11$$

$$\frac{7}{11} > \frac{7}{18}$$

Rule 3: If the numerators and denominators are different then to compare the fractions, we follow the steps.

Step 1: Find the least common denominator.

Step 2: Write the equivalent fractions equivalent to the original using the common denominator.

Step 3: Compare the fractions using Rule 1.

Example 3: Compare $\frac{1}{3}$ and $\frac{2}{5}$

Step 1: LCD (3, 5) = 15

$$\text{Step 2: } \frac{1}{3} = \frac{1 \times 5}{3 \times 5} = \frac{5}{15}$$
$$\frac{2}{5} = \frac{2 \times 3}{5 \times 3} = \frac{6}{15}$$

Step 3: Denominators are the same, but $6 > 5$.

$$\frac{6}{15} > \frac{5}{15}$$
$$\frac{2}{5} > \frac{1}{3}$$