How to Compare Fractions

$$\frac{3}{7} \quad \text{and} \quad \frac{5}{9}$$

1. Find a common denominator by multiplying the denominator of the first fraction by the denominator of the second fraction. This will be the new denominator for both fractions.

$$\frac{3}{\textcircled{7}} \text{ and } \frac{5}{\textcircled{9}} \qquad 7 \times 9 = 63 = \text{common denominator}$$

2. Multiply the numerator of the first fraction by the denominator of the second fraction. This is the new numerator for the first fraction.

$$\frac{\textcircled{3}}{7} \text{ and } \frac{5}{\textcircled{9}} \qquad \frac{3}{7} \diagdown \frac{5}{9} \qquad 3 \times 9 = 27 = \text{new numerator for } \frac{3}{7}$$

$$\boxed{\frac{3}{7} = \frac{27}{63}}$$

3. Multiply the numerator of the second fraction by the denominator of the first fraction. This is the new numerator of the second fraction.

$$\frac{3}{\textcircled{7}} \text{ and } \frac{\textcircled{5}}{9} \qquad \frac{3}{7} \diagup \frac{5}{9} \qquad 5 \times 7 = 35 = \text{new numerator for } \frac{5}{9}$$

$$\frac{5}{9} = \frac{35}{63}$$

4. Compare the numerators of the new fractions.

$$\frac{27}{63} \nearrow^{\frac{3}{7}} \; < \; \frac{35}{63} \nearrow^{\frac{5}{9}} \quad \text{So} \quad \boxed{\frac{3}{7} < \frac{5}{9}}$$