

Compare Fractions with Cross Multiplication

$$\begin{array}{r} 9 \qquad 6 \\ \uparrow \qquad \uparrow \\ \frac{1}{2} \qquad \frac{3}{9} \end{array}$$

Cross multiply and place the products on top of the fractions.

The larger product indicates the larger fraction.

Shown above: one-half is larger than three-ninths.

$$\begin{array}{r} 30 \qquad 30 \\ \uparrow \qquad \uparrow \\ \frac{3}{5} \qquad \frac{6}{10} \end{array}$$

Cross multiplication is often used to identify equivalent fractions.

Shown above: three-fifths is equal to six-tenths.

This makes sense because $\frac{3}{5}$ times $\frac{2}{2}$ is $\frac{6}{10}$. Numbers do not change when multiplied by one.

$$\begin{array}{r} 63 \qquad 64 \\ \uparrow \qquad \uparrow \\ \frac{7}{8} \qquad \frac{8}{9} \end{array}$$

The smaller product indicates the smaller fraction.

Shown above: seven-eighths is less than eight-ninths.

This makes sense because each number is 1 unit fraction less than one. One-ninth is the smaller unit fraction so eight-ninths is closer to one on the number line.