Introducing:

- dividend
- divisor
- quotient

$\frac{1}{2} \div \frac{1}{2} = \frac{1}{2}$
Division is a form of subtraction. This picture shows that the divisor $\frac{1}{2}$ can be subtracted 3 times from the dividend $1\frac{1}{2}$. A quotient 3 tells us how many times the divisor can be subtracted from the dividend.
To calculate the *quotient*, first write the *dividend* and *divisor* in fraction form. Then multiply $\frac{3}{2}$ by the inverse of $\frac{1}{2}$. This gives a *quotient* of $\frac{3}{2} \times \frac{2}{1}$ or 3.
This picture shows that \(1 \frac{3}{4}\) can be subtracted from \(5 \frac{1}{4}\) three times.
The same example with number lines shows that $1 \frac{3}{4}$ fits into $5 \frac{1}{4}$ three times.
The divisor has been decreased to $1 \frac{1}{4}$. Notice the quotient is increased to $4 \frac{1}{5}$. As the divisor decreases, the quotient increases.
The *divisor* has been decreased to 1. Notice the *quotient* is increased to $5\frac{1}{4}$. Dividing by 1 gives a *quotient* equal to the *dividend*.
When the divisor is less than 1, the quotient is larger than the dividend.
Decreasing the divisor to $\frac{1}{2}$ increases the quotient to $10 \frac{1}{2}$. 

**Divide Fractions 8**

\[
\frac{5 \frac{1}{4}}{\frac{1}{2}} = \frac{21}{4} \div \frac{1}{2} = \frac{21}{4} \times \frac{2}{1} = 10 \frac{1}{2}
\]

- **Dividend**: $\frac{5}{4}$
- **Divisor**: $\frac{1}{2}$

Write in fraction form, multiply by the reciprocal, and simplify.
When the divisor is smaller than the dividend, the quotient is more than 1.
Another example where the \textit{divisor} smaller than the \textit{dividend}. 

\[
3 \frac{3}{4} + 1 \frac{1}{2} = \frac{15}{4} \div \frac{3}{2} = \frac{15}{4} \times \frac{2}{3} = 2 \frac{1}{2}
\]

- \textit{dividend}
- \textit{divisor}

Write in fraction form.

Multiply by the reciprocal.

simplify
When the divisor is the same size as the dividend, the quotient is 1.
When the divisor is larger than the dividend, the quotient is less than 1.
Another example where the \textit{divisor} is larger than the \textit{dividend}.
What is the *quotient* of $1 \frac{3}{4}$ divided by $\frac{2}{3}$?

$$1 \frac{3}{4} \div \frac{2}{3} = ?$$
Divide Fractions 15

\[
\frac{\frac{3}{4}}{\frac{2}{3}} = \frac{\frac{7}{4}}{\frac{2}{3}} = \frac{\frac{7}{4}}{\frac{3}{2}} = \frac{5}{8}
\]

\[\text{dividend} \div \text{divisor} = \text{quotient}\]

Write in fraction form. Multiply by the reciprocal. Simplify.
What is the quotient of $1 \frac{5}{8}$ divided by $2 \frac{3}{4}$?

$1 \frac{5}{8} \div 2 \frac{3}{4} = ?$
Divide Fractions 17

\[
1 \frac{5}{8} + 2 \frac{3}{4} = \frac{13}{8} \div \frac{11}{4} = \frac{13}{8} \times \frac{4}{11} = \frac{13}{22}
\]

- **Dividend**
- **Divisor**
- **Write in fraction form.**
- **Multiply by the reciprocal.**
- **Simplify**