Division of Fractions

Learning Goal:

By the end of today, I will be able to divide mixed fractions.

Techniques:

Number line
Patterning
Shortcut

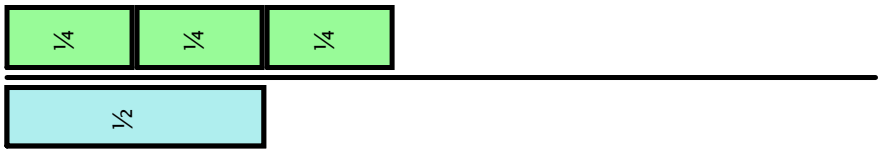
Is there a difference between the following two statements?

What is six divided in half?

What is six divided by half?

Three quarters divided by one half
(How many halves fit into three quarters?)

$$\frac{3}{4} \div \frac{1}{2}$$



(drag over)

The ½ tile represents the "new" whole unit.

How many full "½" tiles fit into the 3/4?

One and a half divided by five eighths
(How many "5/8ths" fit into one and a half?)

$$1\frac{1}{2} \div \frac{5}{8}$$

(drag over)

The 5/8 tile represents the "new" whole unit.

How many full "5/8" tiles fit into the 1½?

Two and a quarter divided by eleven sixteenths
(How many "11/16ths" fit into two and a quarter?)

$$2\frac{1}{4} \div \frac{11}{16}$$

(drag over)

The 11/16 tile represents the "new" whole unit.

How many full "11/16" tiles fit into the 2¼?

Patterning

Multiply by one half

$$10 \times \frac{1}{2}$$

or

$$\frac{10}{1} \times \frac{1}{2}$$

Divide by two

$$10 \div 2$$

or

$$\frac{10}{1} \div \frac{2}{1}$$

Patterning

Multiply by one half

$$6 \times \frac{1}{2}$$

or

$$\frac{6}{1} \times \frac{1}{2}$$

Divide by two

$$6 \div 2$$

or

$$\frac{6}{1} \div \frac{2}{1}$$

Dividing by 2 yields the same result as multiplying by one half, hmmm....

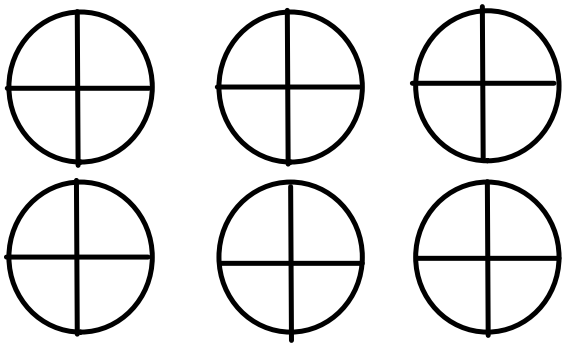
Evaluate and Compare (use a calculator to help verify your answer)

$$12 \div 4 =$$

$$12 \times \frac{1}{4} =$$

Evaluate

$$\frac{6}{1} \div \frac{3}{4} =$$



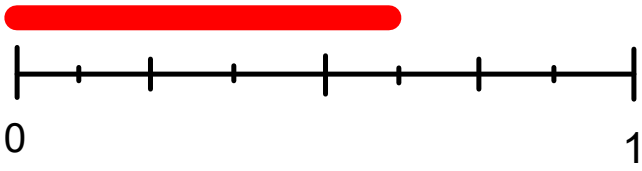
How many "¾" fit into six whole units?

Shortcut

When you divide **by** a fraction, the shortcut is to invert (flip) the dividing term and multiply. (reciprocal)

Evaluate

$$\frac{5}{8} \div \frac{1}{4} =$$



How many "1/4" fit in "5/8"?

Extensions and More Challenging Applications

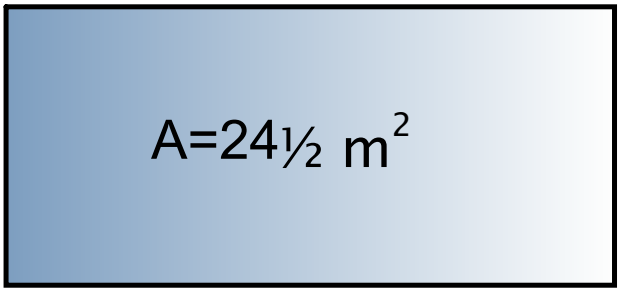
Evaluate

Make an estimate of 6 divided by 2 first.

$$6\frac{3}{8} \div 2\frac{1}{8} =$$

Find the missing dimension.

For a rectangle, A= l x w



w = 3½ m

L = _____

Evaluate

$$\left(\frac{1}{2}\right)^3$$

Why do you get a smaller answer than what you started with?

Are these different or the same? Why?

$$A = \frac{1}{2}bh \qquad A = \frac{bh}{2}$$

Task - Division of Fractions

Attachments

Math - task - division fractions.doc