Math 7H - Unit 1b

Day 10 - Dividing Fractions

Lesson Objectives:

- I can divide positive and negative fractions.

Let's review how division works.

$6 \div 2 = 3$

If we divide 6 cookies between 2 kids, then there will be 3 cookies in a serving.

If we divide 6 cookies into serving sizes of 2 cookies, then 3 kids will get a serving.

$6 \div \frac{1}{2} = 12$

If we divide 6 cookies between 1/2 a kid, then there will be 12 cookies in a serving.

Hmmmm....

If we divide 6 cookies into serving sizes of 1/2 cookie, then 12 kids will get a serving.

$8 \div \frac{1}{4} = 32$

If we divide 8 candy bars into serving sizes of 1/4 candy bar, then 32 kids will get a serving.

$8 \div \frac{3}{4} = 10\frac{2}{3} = \frac{32}{3}$

If we divide 8 candy bars into serving sizes of 3/4 candy bar, then 10 kids will get a full serving and there will be 2/3 of a serving left over.

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

If we divide 3/4 candy bar into serving sizes of 1/4 of a whole candy bar, then 3 kids will get a serving.

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

If we divide 3/4 candy bar into serving sizes of 1/3 of a whole candy bar, then 2 kids will get a serving with 1/4 serving left over.

$2\frac{1}{4} = \frac{9}{4}$

Two numbers whose product is 1 are **multiplicative inverses**, or **reciprocals**, of each other.

What is the reciprocal of the following numbers?

$5 \cdot \frac{1}{5} = 1$ $\frac{8}{3} \cdot \frac{3}{8}$ $-15 \; -\frac{1}{15}$ $\frac{1}{300}$ 300

To divide by a fraction, multiply by its multiplicative inverse (or the reciprocal).

$\frac{4}{5} \div \frac{3}{10} = \frac{4}{5} \times \frac{10}{3} = \frac{40}{15} = \frac{8}{3}$

$\frac{5}{6} \div 3 = \frac{5}{6} \times \frac{1}{3} = \frac{5}{18}$

$-\frac{2}{3} \div \left(-\frac{5}{6}\right) = -\frac{2}{3} \times -\frac{6}{5} = +\frac{12}{15} = \frac{4}{5}$

$4\frac{2}{3} \div -3\frac{1}{9} = \frac{14}{3} \div \frac{-28}{9} = \frac{14}{3} \times \frac{9}{-28} = \frac{126}{-84} = -\frac{63}{42} = -\frac{9}{6} = -\frac{3}{2}$

Homework

Dividing Fractions WKS

* Individual Think Time *

What to do if you get stuck...

1. Reread the problem. Did you write it down correctly?
2. Reread your notes. Is there a problem similar that we did together in class?
3. Find a problem similar in your book. Try this one to see if it helps.
4. Skip the problem until the end of Individual Think Time. Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...