

Name: _____

Date: Aug 15

Hour: _____

Alg 1

Algebra Foundational Skill 1: Dividing Fractions

Focus Question: How can I efficiently multiply and divide fractions?

A. Multiplying Fractions

1. What is $\frac{2}{3}$ of 24?

a. How do you write the problem above?

$$\frac{2}{3} \cdot \frac{24}{1} \Rightarrow \frac{48}{3} \Rightarrow 16$$

b. How did you solve the problem above?

$$\frac{2}{3} \cdot \frac{24}{1}$$

$$\frac{48}{3}$$

$$16$$

2. When you multiply fractions, you multiply across

3. Simplify the following:

$$\frac{6}{12}$$

a) $\frac{2}{3} \times \frac{3}{4} = \frac{1}{2}$

b) $\frac{7}{9} \times \frac{2}{3} = \frac{14}{27}$

c) $\frac{8}{9} \times \frac{1}{4} \Rightarrow \frac{8}{36} \Rightarrow \frac{2}{9}$

d) $\frac{4}{10} \times \frac{1}{2} \Rightarrow \frac{4}{20} \Rightarrow \frac{1}{5}$

4. Simplify the following:

a) $\frac{1}{5} \times \frac{8}{1} = \frac{8}{5}$

b) $\frac{2}{10} \times \frac{5}{1} \Rightarrow \frac{10}{10} \Rightarrow 1$

c) $\frac{3}{1} \times \frac{7}{8} = \frac{21}{8}$

B. Dividing Fractions

1. Shelby owns $\frac{11}{4}$ acres of land that she wants to split up and sell. In order to sell it as a parcel to build a house on, the size of the land has to be at least $\frac{2}{3}$ of an acre. How many parcels of land can Shelby divide her property into? Show how you got your answer.

$$\frac{11}{4} \div \frac{2}{3}$$

$$\frac{11}{4} \cdot \frac{3}{2} \Rightarrow \frac{33}{8}$$

She can make
4 parcels

2. If you were to set up the problem above, you would have made the expression $\frac{11}{4} \div \frac{2}{3}$ and your answer to the problem above should have been at most, 4 parcels. What is the answer to the problem below?

$$\frac{11}{4} \cdot \frac{3}{2} = \frac{33}{8}$$

3. How are $\frac{11}{4} \div \frac{2}{3}$ and $\frac{11}{4} \cdot \frac{3}{2}$ similar?

reciprials

inverse oper.

4. What is $\frac{1}{4} \div 2$? $\frac{1}{8}$ What is $\frac{1}{4} \div \frac{1}{2}$? $\frac{1}{8}$ How are the two problems similar?
 recip.

5. What do problems 3 and 4 have in common?

6. From now on, we don't divide fractions, we multiply by the reciprocal.

7. Simplify the following:

a. $15 \div \frac{5}{3}$

$$15 \cdot \frac{3}{5} \Rightarrow \frac{45}{5} \Rightarrow \boxed{9}$$

b. $\frac{1}{4} \div \frac{7}{2}$

$$\frac{1}{4} \cdot \frac{2}{7} \Rightarrow \frac{2}{28} \Rightarrow \boxed{\frac{1}{14}}$$

c. $\frac{9}{4} \div \frac{7}{1}$

$$\frac{9}{4} \cdot \frac{1}{7} = \boxed{\frac{9}{28}}$$

d. $\frac{10}{3} \div \frac{5}{6}$

$$\frac{10}{3} \cdot \frac{6}{5} \Rightarrow \frac{60}{15} \Rightarrow \boxed{4}$$

e. $\frac{2}{1} \div \frac{1}{4}$

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

$$2 \cdot \frac{4}{1} = \boxed{8}$$

f. $\frac{5}{7} \div \frac{10}{3}$

$$\frac{5}{7} \div \frac{10}{3}$$

$$\frac{5}{7} \cdot \frac{3}{10} \Rightarrow \frac{15}{70} \Rightarrow \boxed{\frac{3}{14}}$$