Date:_____

6.5 Notes: Dividing Fractions

There are two methods for dividing fractions:

Method 1: Common Denominator

Write the fractions with a common denominator and divide the numerators.

_____.

Eg

$\frac{7}{8} \div \frac{3}{8} = \frac{7}{3}$

$4\frac{2}{5} \div 1\frac{1}{2} = \frac{8}{10} \div \frac{5}{10}$

$= \frac{8}{5}$

$\frac{13}{5} \div 4\frac{1}{3} = \frac{39}{15} \div \frac{20}{15}$

$= \frac{39}{20}$

$3\frac{1}{2} \div 1\frac{2}{3} = \frac{7}{2} \div \frac{5}{3}$

$= \frac{21}{6} \div \frac{10}{6}$

$= \frac{21}{10} = 2\frac{1}{10}$

Can $\frac{2}{3} \times \frac{5}{7}$ be changed into a division question?

Method 2: Divide Using a Multiplication

To divide a fraction, you can also multiply by its reciprocal

Eg

$\frac{7}{8} \div 3 = \frac{7}{8} \times \frac{8}{3}^{1}$

$= \frac{7}{3}$

$\frac{13}{5} \div 4 = \frac{13}{5} \times \frac{3}{4}$

$= \frac{39}{20}$

$\frac{4}{5} \div 1 = \frac{4}{5} \times \frac{2}{1}$ (keep, change, flip)

$= \frac{8}{5}$

$3\frac{1}{2} \div 1\frac{2}{3} = \frac{7}{2} \div \frac{5}{3}$

$= \frac{7}{2} \times \frac{3}{5}$

$= \frac{21}{10} = 2\frac{1}{10}$

{Keep Change Flip

Reciprocal

$\frac{2}{5} \times \frac{5}{2} = \frac{1}{1} = 1$

reciprocal fraction is result of switching the numerator and denominator.
Both fractions when multiply give product of 1.

$\frac{3}{7} \rightarrow$ reciprocal $\rightarrow \frac{7}{3}$

Eg. Jorge has a very rare Yu-Gi-Oh card worth $\$5\frac{1}{2}$. This is $\frac{3}{4}$ of the original price he paid for it. What price was it when he bought it?

$5\frac{1}{2} \div \frac{3}{4} = \frac{11}{2} \div \frac{3}{4}$

$= \frac{11}{2} \times \frac{4}{3}^{2}$

$= \frac{22}{3}$

$= 7\frac{1}{3}$

The Original price is $\$7\frac{1}{3}$.