

# Warm-Up

Evaluate the following expressions:

$$1) -\frac{11}{6} - \frac{5}{8} + \frac{1}{4}$$

$$-\frac{44}{24} - \frac{15}{24} + \frac{6}{24}$$

$$-\frac{53}{24} = -2\frac{5}{24}$$

$$3) \left(-\frac{2}{7}\right) \left(-\frac{1}{3}\right)$$

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

$$2) (-4.55)(7.28)$$

$$-33.12$$

$$4) \left(-3\frac{3}{4}\right) \left(-2\frac{1}{3}\right)$$

$$\left(-\frac{15}{4}\right) \left(-\frac{7}{3}\right)$$

$$= \frac{35}{4}$$

$$= 8\frac{3}{4}$$

#14

$$\$45,567.81$$

$$\$3,457.25/\text{truck}$$

$$25 \text{ trucks} \times \$3,457.25/\text{truck}$$

$$= \$86,431.25$$

$$45,567.81 - 86,431.25$$

$$= -\$40,863.38$$

Determine the sign of each quotient

$$\text{a) } \left(\frac{-3}{4}\right) \div \left(\frac{-7}{8}\right) = (+)$$

$$\text{b) } \left(\frac{-2}{5}\right) \div \left(\frac{6}{7}\right) = (-)$$

$$\text{c) } 7.8 \div 3.6 = (+)$$

Multiplication + Division

same signs  $\rightarrow (+)$

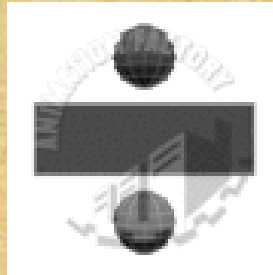
$\begin{matrix} (-)(-) \\ (+)(+) \end{matrix}$

different signs  $\rightarrow (-)$

$\begin{matrix} (+)(-) \\ (-)(+) \end{matrix}$



# Dividing Fractions



## Reciprocal

- Every **non-zero** fraction has a reciprocal.
- Fractions with a denominator of "0" are undefined ( $\frac{6}{0}$ )
- To find the **reciprocal** of a fraction, you simply **flip** the fraction !! }\*

$$\frac{4}{5}$$

$$\frac{5}{4}$$



$$6/0 \quad \text{recip} \quad \boxed{\frac{6}{0}}$$

|        |       |
|--------|-------|
| $5/4$  | $4/5$ |
| $3/4$  | $4/3$ |
| $5/2$  | $2/5$ |
| $-1/3$ | $3/1$ |
| $-2$   | $2/1$ |

Express each division question as a multiplication question !!!!

## Terminology

Dividend

Quotient

Divisor

$$10 \div 5 = 2$$





## Dividing Fractions

Multiply the **dividend** by the  
**reciprocal** of the **divisor** !!

(1st #)

(2nd #)

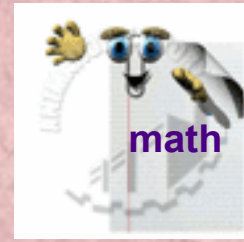
$$\frac{4}{5} \div \frac{1}{3} =$$

$$\frac{4}{5} \times \frac{3}{1} = \frac{12}{5} = 2\frac{2}{5}$$

<http://www.youtube.com/watch?v=80WArGwAjt8&feature=related>

Keep the first  
Multiply  
Flip the 2nd

# Try These !!



#1

$$\frac{4}{5} \div \frac{7}{8} =$$

$$\frac{4}{5} \times \frac{8}{7} = \frac{32}{35}$$

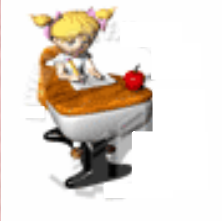
#2

$$\frac{1}{8} \div \frac{-6}{5}$$

$$\frac{1}{8} \times \frac{-5}{6} = \frac{-5}{48}$$



#3



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

$$\frac{9}{4} \times \frac{1}{5} = \frac{9}{20}$$

Determine the missing number in the division statement.

Missing Dividend

$$(12) \div 4 = 3$$

Think:

**Division** is the inverse of **Multiplication**.

To Solve for Missing Dividend  
take **Divisor** X **Quotient**

$$(\quad) = 3 \times 4$$





## Now with Rational #s

You Try

A)  $\left(\frac{15}{77}\right) \div \left(\frac{5}{11}\right) = \frac{3}{7}$

B)

Missing dividend so \_\_\_\_\_  $\div$  12.6 = 4.2  
 Multiply the divisor  
 & quotient

$$\left(\frac{5}{11}\right) \times \left(\frac{3}{7}\right) = \frac{15}{77}$$

$$\underline{52.92} \div 12.6 = 4.2$$

$$12.6 \times 4.2 = 52.92$$

# Determine the missing number in the division statement.

## Missing Divisor

$$15 \div (-3) = -5$$

Think:

**Quotient** is negative thus the BLANK must be what sign? \_\_\_\_\_

To solve for missing Divisor

take **Dividend**  $\div$  **Quotient**

$$15 \div (\quad) = -5$$



You Try

$$-2.5 \div \underline{-0.5} = 5$$

$$-2.5 \div 5 = -0.5$$

$$\left(\frac{-12}{21}\right) \div \left(\frac{-96}{105}\right) = \frac{5}{8}$$

$$\begin{aligned} & -\frac{12}{21} \div \frac{5}{8} \\ & -\frac{12}{21} \times \frac{8}{5} = \frac{-96}{105} \end{aligned}$$

## Your Turn

$$A) \left(\frac{15}{26}\right) \div ( ) = \frac{-3}{2}$$

$$B) \left(\frac{-6}{7}\right) \div ( ) = \frac{18}{49}$$

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#3 a, c, e  
#4 a, c, e

