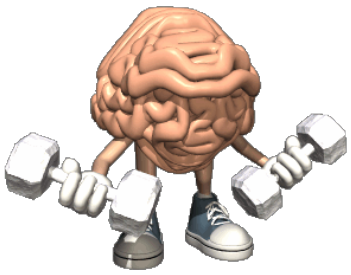
Curriculum Outcome

N1: Demonstrate an understanding of rational numbers by: comparing and ordering rational numbers; solving problems that involve arithmetic operations on rational numbers.

Student Friendly:
“Dividing fractions and decimals "



Warm-Up

MUST SHOW ALL WORK

Evaluate the following expressions:

2) $-3\frac{3}{5} + 5\frac{1}{2} - \left(-4\frac{2}{3}\right)$

$= \frac{-18}{5} + \frac{11}{2} - \frac{(-14)}{3}$

$= \frac{-108}{30} + \frac{165}{30} + \frac{140}{30}$

$= \frac{57}{30} + \frac{140}{30}$

$= \frac{197}{30}$

$= 6\frac{17}{30}$

Warm-Up

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

$= \frac{2}{21}$

Warm-Up

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

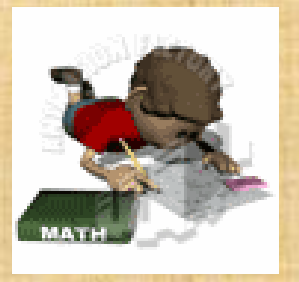
$= \frac{-15}{4} \times \frac{-7}{3}$

$= \frac{\overset{-5}{\cancel{-15}}}{4} \times \frac{-7}{\cancel{3}_{1}}$

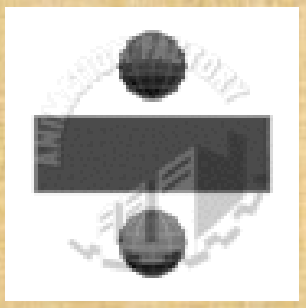
$= \frac{-5}{4} \times \frac{-7}{1}$

$= \frac{35}{4}$

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



Dividing Fractions



Dividing Rational Numbers

Remember FRACTIONS are just numbers!

THUS

The properties are still the same.

$$(+) \div (+) = (+)$$

* When two rational numbers have the **same sign**, their quotient is **positive**.

$$(-) \div (-) = (+)$$

$$(+) \div (-) = (-)$$

* When two rational numbers have the **different signs**, their quotient is **negative**.

$$(-) \div (+) = (-)$$

Determine the sign of each quotient

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

+

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

-

c) $7.8 \div 3.6$

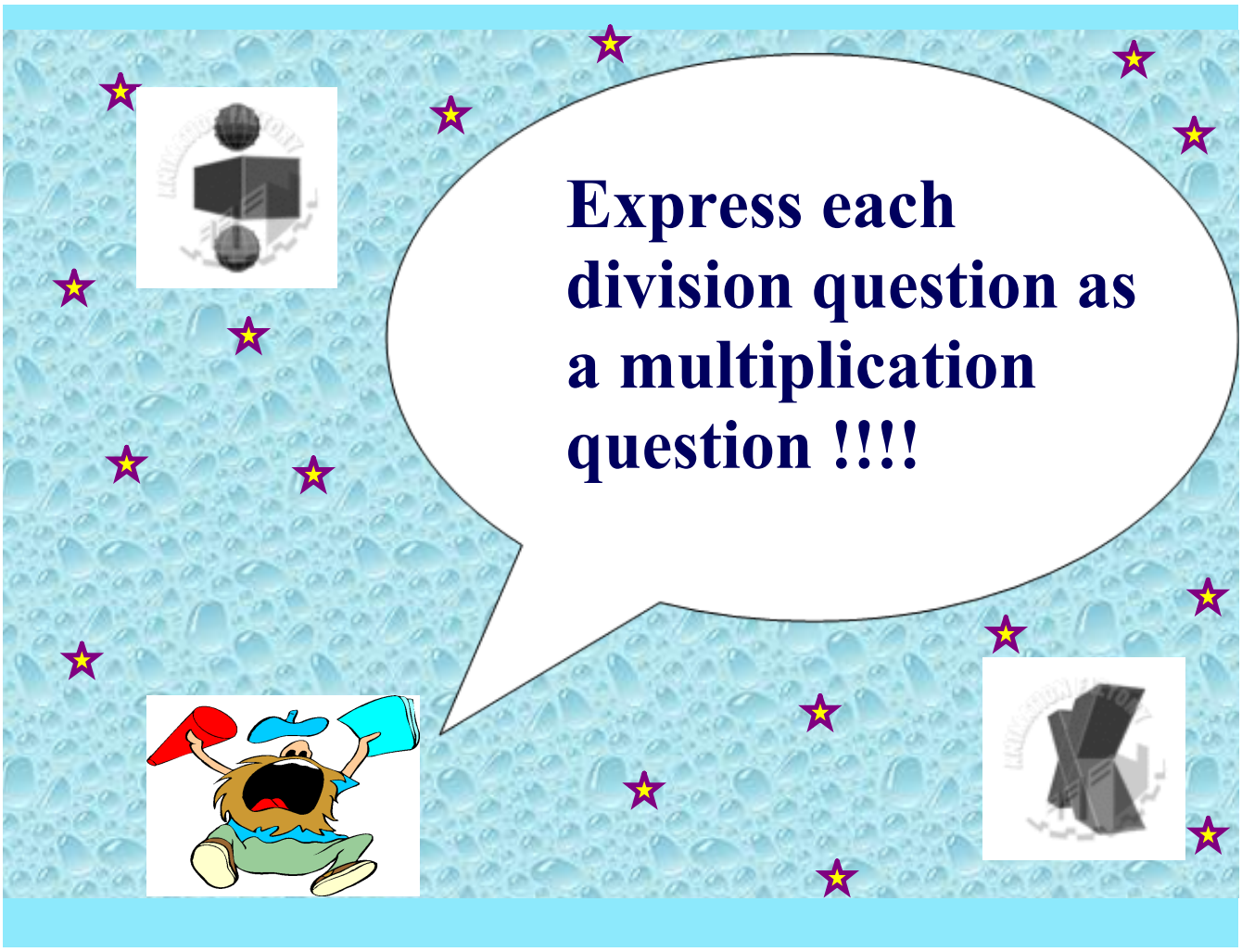
+

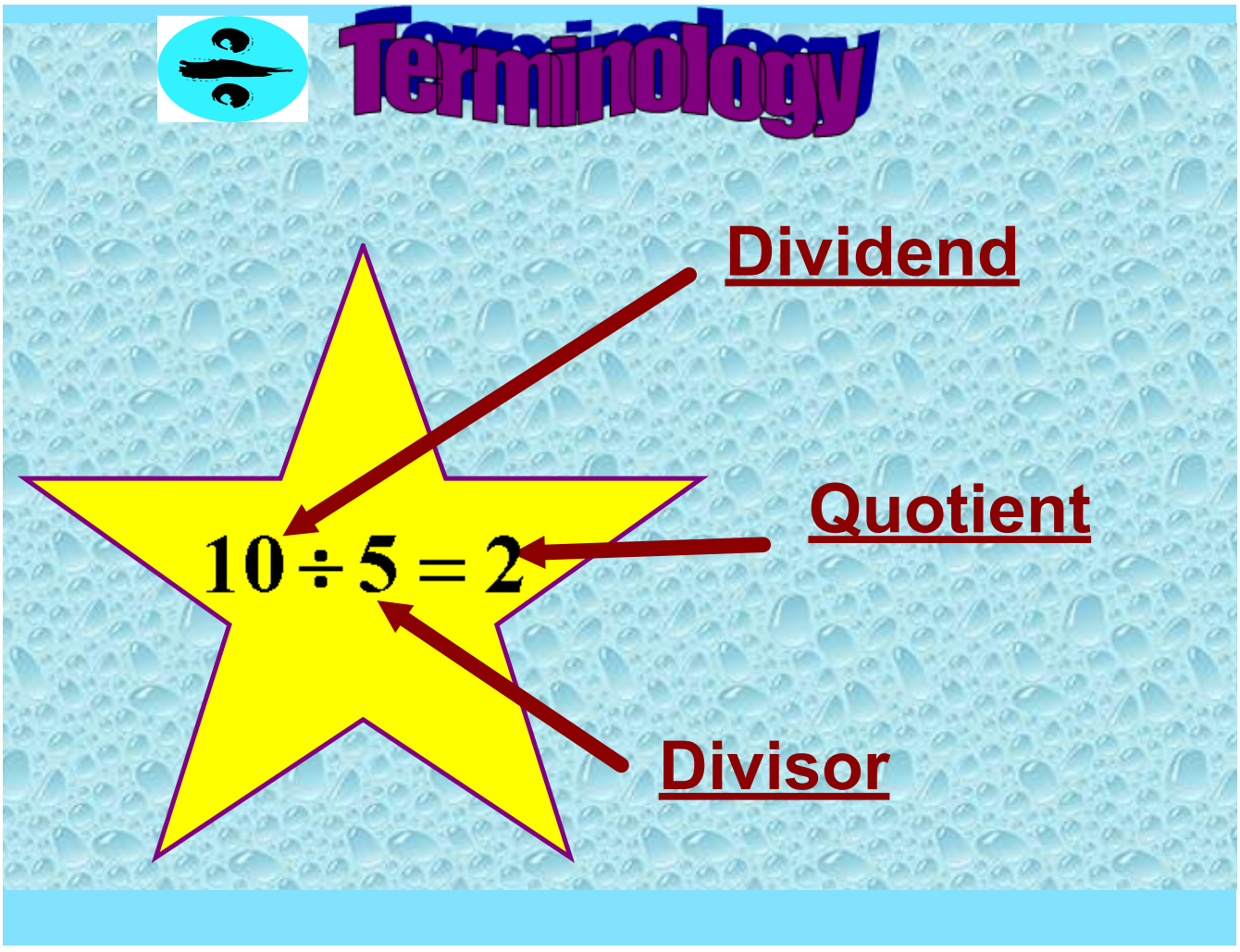
Reciprocal

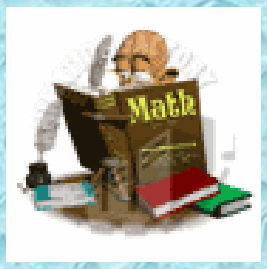
- Every non-zero fraction has a reciprocal.
- Fractions with a denominator of "0" are undefined. $\left(\frac{6}{0}\right)$
- To find the reciprocal of a fraction, you simply flip the fraction !!

reciprocal

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


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


Terminology
Dividend
Quotient
Divisor
10 ÷ 5 = 2



Dividing Fractions

Multiply the dividend by the reciprocal of the divisor !!

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

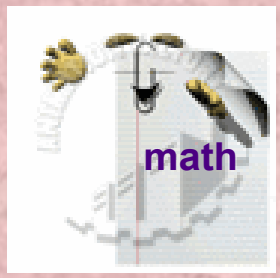
$$= \frac{4}{5} \times \frac{3}{1}$$

$$= \frac{12}{5}$$

why to flip and multiply?

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

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

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

$$= \frac{9}{4} \div \frac{5}{1}$$

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

$$= \frac{9}{20}$$

Try on your own

Remember: Must reduce when possible

Find the Quotient (Show work)

1) $\frac{3}{5} \div \frac{-7}{15}$

$= \frac{3}{5} \times \frac{-15}{7}$

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

$= \frac{-9}{7}$ $= \frac{2}{9}$

Determine the missing number in the division statement.

Think

Copy down

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

Missing Dividend

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

Think:
Division is the inverse of **Multiplicatio**

To Solve for Missing Dividend
take Divisor X Quotient

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

$$( ) = 12$$

Check work

$$12 \div 4 = 3$$

Think

$(12) \div 4 = 3$

To Solve for Missing Dividend
take Divisor X Quotient

You Try

Now with Rational #s

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

$(\ ) = \frac{3}{7} \times \frac{5}{11}$

$(\ ) = \frac{15}{77}$

Check Work

$\frac{15}{77} \div \frac{5}{11}$

$= \frac{15}{77} \times \frac{11}{5}$

$= \frac{\overset{3}{\cancel{15}}}{\underset{7}{\cancel{77}}} \times \frac{\cancel{11}^{1}}{\cancel{5}_{1}}$

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

$= \frac{3}{7}$

B) $\_\_\_\_ \div 12.6 = 4.2$

$= 4.2 \times 12.6$

$= 52.92$

Check Work

$52.92 \div 12.6 = 4.2$

Determine the missing number in the division statement.

Think

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

Missing Divisor

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

To solve for missing Divisor

take Dividend ÷ Quotient

12 ÷ 3= 4

Check Work

15 ÷ -3= -5

Think

$12 \div (4) = 3$

You Try

1) $-2.5 \div \_\_\_ = 5$

$-2.5 \div 5 = -0.5$

Check Work

$-2.5 \div -0.5 = 5$

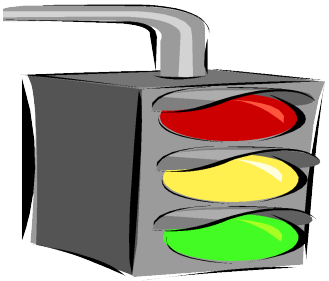
2) $\left(\frac{-12}{21}\right) \div (\ ) = \frac{5}{8}$

$\frac{-12}{21} \div \frac{5}{8}$

$\frac{-12}{21} \times \frac{8}{5}$

$\frac{-96}{105}$

Check Work



Class/Homework

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Questions

3ace	11a
4	12
8	17 a, c, d
9 a, c, e	18 a

Do not just write down answers show work. You don't have to rewrite word problems but you do have to write out the questions (NOT JUST THE ANSWERS)