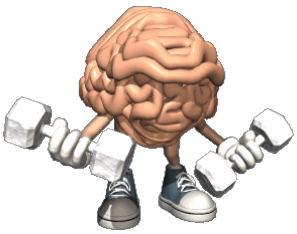
Curriculum Outcome

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:

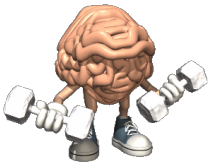
1) $-\frac{11}{6} - \frac{5}{8} + \frac{1}{4}$

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

3) (-4.55) (7.28)

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

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



Warm-Up

MUST SHOW ALL WORK

Evaluate the following expressions:

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

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

$-\frac{53}{24}$

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

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

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

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

$\frac{197}{30}$

$6\frac{17}{30}$

Warm-Up

3) (-4.55) (7.28)

-33.124

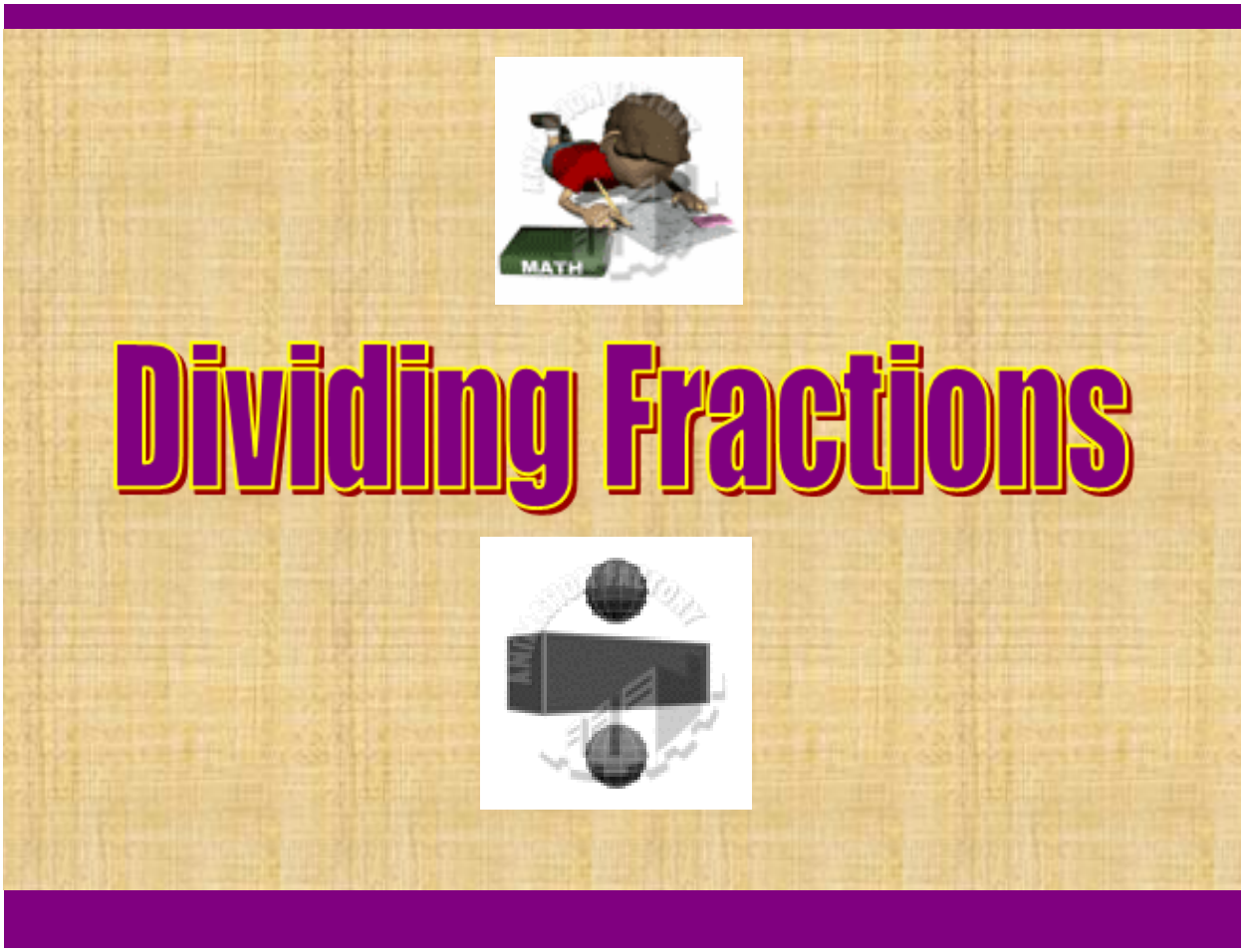
4) $\left(-\frac{2}{7}\right)\left(\frac{-1}{3}\right) = \frac{2}{21}$

Warm-Up

5) $(-3\frac{3}{4})(-2\frac{1}{3}) = \left(-\frac{15}{4}\right)\left(-\frac{7}{3}\right)$

$= \frac{35}{4}$

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



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

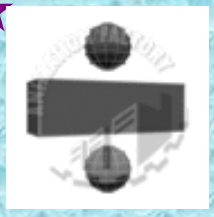
c) $7.8 \div 3.6$ +

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 !!!!

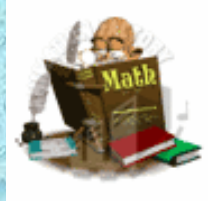
Terminology

Dividend

$10 \div 5 = 2$

Quotient

Divisor



Dividing Fractions

Multiply the dividend by the reciprocal of the divisor !!

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

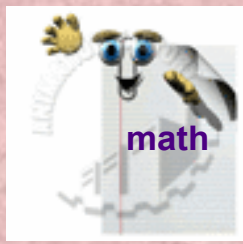
$$= \frac{4}{5} \times \frac{3}{1}$$

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

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

$$2\frac{1}{4} \div \frac{5}{1} = \frac{9}{4} \times \frac{1}{5}$$

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

Try on your own

Remember: Must reduce when possible

Find the Quotient (Show work)

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

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

$-\frac{9}{7}$

$-1\frac{2}{7}$

2) $\frac{-4}{27} \div \frac{-2}{3}$

$-\frac{4}{27} \times -\frac{3}{2}$

$\frac{2}{9}$

3) $10.4 \div -5.2$

$= -2$

Determine the missing number in the division statement.

Missing Dividend

Copy down

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

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

To Solve for Missing Dividend
take Divisor X Quotient

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

( ) = 12

Check work

To Solve for Missing Dividend
take Divisor X Quotient

Now with Rational #s

You Try

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

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

Check Work

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

$(12.6)(4.2) = 52.92$

Check Work

$52.92 \div 12.6 = 4.2$ ✓

Determine the missing number in the division statement.

Copy Down

Missing Divisor

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

Think:
Quotient is negative thus the BLANK must be what sign? _____

To solve for missing Divisor
take Dividend ÷ Quotient

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

$15 \div -5 = -3$

Check Work

$15 \div -3 = -5$

To solve for missing Divisor
take Dividend ÷ Quotient

You Try

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

$-2.5 \div 5 = -0.5$

Check Work

$-2.5 \div -0.5 = 5$

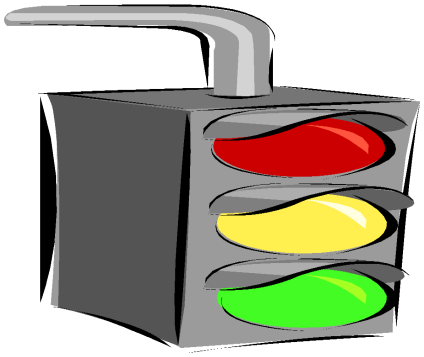
2) $\left(\frac{-12}{21}\right) \div (\ ) = \frac{5}{8}$

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

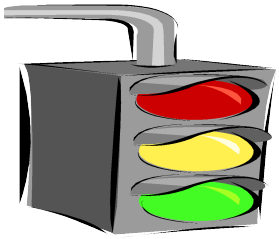
$-\frac{12}{21} \times \frac{8}{5}$

$= \frac{-96}{105}$

Check Work



Now it is time for Home Learning



Practice Questions

p. 134-136

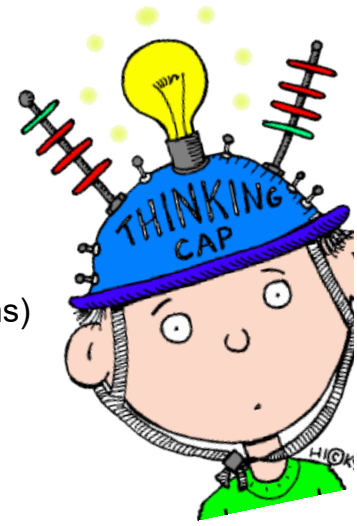
Questions

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)

Class / Homework

Practice Problems
Page 135-136



Once complete do Review Worksheet (all questions)

See next slide

Math 9: Chapter 3 Name_____

Section 3.1-3.5 Review Date_____

Evaluate each expression.

1) $\frac{11}{7} - \left(-\frac{8}{7}\right)$

2) $\left(-\frac{7}{4}\right) - 2\frac{11}{12}$

3) $1\frac{5}{6} + \left(-2\frac{1}{4}\right)$

4) $\left(-\frac{8}{9}\right) - \left(-\frac{4}{3}\right)$

5) $\left(-\frac{2}{5}\right) - \frac{7}{11}$

6) $(-5) - 4\frac{3}{4}$

7) $(-5.6) - (-7.7)$

8) $(-0.3) + (-2.1)$

Find each product.

9) $-\frac{14}{9} \times -\frac{10}{9}$

10) $-1\frac{1}{6} \times -\frac{6}{5}$

11) $\frac{3}{2} \times -\frac{11}{8}$

12) $-2\frac{4}{5} \times \frac{17}{10}$

13) $-\frac{8}{9} \times -\frac{1}{2}$

14) $1\frac{1}{9} \times -\frac{1}{2}$

15) 3.2×-3.6

16) -7.3×-9.3

Find each quotient.

17) $-2\frac{1}{3} \div \frac{-9}{8}$

18) $\frac{-4}{5} \div -2$

19) $-2\frac{1}{2} \div \frac{13}{7}$

20) $\frac{-8}{9} \div \frac{9}{7}$

21) $\frac{-4}{5} \div 7$

22) $\frac{-12}{7} \div \frac{-1}{7}$

23) $2.1 \div -6.5$

24) $-4.4 \div 0.1$

Answers to Section 3.1-3.5 Review

1) $2\frac{5}{7} = \frac{19}{7}$	2) $-4\frac{2}{3}$	3) $-\frac{5}{12}$	4) $\frac{4}{9}$
5) $-1\frac{2}{55} = \frac{-57}{55}$	6) $-9\frac{3}{4}$	7) 2.1	8) -2.4
9) $1\frac{59}{81} = \frac{140}{81}$	10) $1\frac{2}{5}$	11) $-2\frac{1}{16} = \frac{-33}{16}$	12) $-4\frac{19}{25}$
13) $\frac{4}{9}$	14) $-\frac{5}{9}$	15) -11.52	16) 67.89
17) $2\frac{2}{27} = \frac{56}{27}$	18) $\frac{2}{5}$	19) $-1\frac{9}{26} = \frac{-35}{26}$	20) $-\frac{56}{81}$
21) $-\frac{4}{35}$	22) 12	23) -0.323076923077	24) -44