Foundations of Algebra

Unit 1 – Part 1

Fractions and Decimal Operations

Name: _____

Name: _____ Date: _____

MULTIPLYING SIGNED FRACTIONS

Using the Rules

Objective: SWBAT determine the product of various signed fractions using the generalized rules.

PROCESS:

1. Use rules of integers to determine the _____ of the _____.
2. Convert all _____ into _____.
3. _____ by dividing out common factors in numerators and denominators.
4. Multiply the _____ together.
5. Multiply the _____ together.

EXAMPLES:

1.) $3\frac{2}{3} \cdot \left(-4\frac{1}{2}\right) =$ _____

2.) $-5\frac{1}{4} \cdot 2\frac{2}{3} =$ _____

3.) $-8\frac{11}{12} \cdot (-2) =$ _____

Name: _____ Date: _____

MULTIPLYING SIGNED FRACTIONS

Using the Rules

Directions: Use the generalized rules to determine the product of the following fractions and mixed numbers. Be sure to show all of your thinking!

1.) $-\frac{4}{15}\square\frac{9}{16} =$ _____

2.) $-\frac{5}{8}\bullet\left(-\frac{2}{3}\right) =$ _____

3.) $\frac{3}{8}\square(-20) =$ _____

4.) $-\frac{9}{12}\square\left(-\frac{12}{9}\right) =$ _____

5.) $1\frac{7}{8}\square\left(-13\frac{1}{3}\right) =$ _____

6.) $-3\frac{3}{4}\square\left(-2\frac{3}{10}\right) =$ _____

Name: _____ Date: _____

DIVIDING SIGNED MIXED NUMBERS

(Lesson 2.3 for book resource)

Objective: Extend understandings of dividing signed fractions to dividing signed mixed numbers using the rules.

REMEMBER: To divide signed mixed numbers...

1.)

2.)

3.)

Example:

The MORAL of the Story

Once upon a time three friars went into the floral business. One day some of the town's children ran into the friars' backyard and were gobbled up by a man-eating plant the friars were growing. The parents of the children demanded that the plant be destroyed, but the friars refused. So the townspeople got the blacksmith, Hugh, to run the friars out of town.

WHAT IS THE MORAL OF THIS STORY? TO FIND OUT:

Do any exercise below and find your answer in the code at the bottom of the page. Each time the answer appears in the code, write the letter of that exercise above it. Keep working and you will discover the moral of the story.

(S) $\frac{-3}{7} \div \frac{1}{2} =$	(T) $\frac{25}{3} \div \frac{15}{6} =$	(N) $\frac{-7}{10} \div 7 =$
(C) $\frac{-4}{5} \div \frac{-4}{3} =$	(G) $\frac{-7}{9} \div \frac{-21}{6} =$	(L) $\frac{11}{12} \div \frac{-33}{8} =$
(Y) $\frac{5}{8} \div \frac{-7}{12} =$	(I) $\frac{-11}{4} \div \frac{2}{3} =$	(P) $\frac{-45}{4} \div \frac{-15}{16} =$
(A) $\frac{-15}{13} \div \frac{-10}{11} =$	(V) $\frac{-9}{10} \div \frac{-12}{5} =$	(H) $\frac{6}{20} \div \frac{7}{10} =$
(E) $\frac{5}{6} \div \frac{-7}{8} =$	(O) $3 \div \frac{-2}{3} =$	(R) $-10 \div \frac{-4}{7} =$
(D) $\frac{-8}{9} \div 2 =$	(U) $\frac{4}{15} \div \frac{-14}{5} =$	(F) $\frac{-48}{9} \div \frac{16}{21} =$

MORAL OF THE STORY

$\frac{3}{7}$ $\frac{-2}{21}$ $\frac{2}{9}$ $\frac{3}{7}$ $\frac{33}{26}$ $\frac{-1}{10}$ $\frac{-4}{9}$ $\frac{-9}{2}$ $\frac{-1}{10}$ $\frac{-2}{9}$ $\frac{-15}{14}$

$\frac{3}{7}$ $\frac{-2}{21}$ $\frac{2}{9}$ $\frac{3}{7}$ $\frac{3}{5}$ $\frac{33}{26}$ $\frac{-1}{10}$ 12 $\frac{35}{2}$ $\frac{-20}{21}$ $\frac{3}{8}$ $\frac{-20}{21}$ $\frac{-1}{10}$ $\frac{10}{3}$

-7 $\frac{-2}{9}$ $\frac{-9}{2}$ $\frac{35}{2}$ $\frac{-33}{8}$ $\frac{-6}{7}$ $\frac{10}{3}$ -7 $\frac{35}{2}$ $\frac{-33}{8}$ $\frac{33}{26}$ $\frac{35}{2}$ $\frac{-6}{7}$

Name: _____ Date: _____

ADDING AND SUBTRACTING SIGNED FRACTIONS

(Lesson 2.2 for book resource)

Objective: Apply the rules of adding and subtracting integers to determine the sum or difference of various signed fractions.

REMEMBER: To add and subtract signed fractions:

1.) Determine the _____ of your answer by keeping the _____ of the fraction with the greatest _____.

2.) Stack the fractions vertically and re-write the problem using a common _____.

3.) Follow the rules for adding INTEGERS:

   a. If the fractions have the _____ signs, _____ their _____.

   b. If the fractions have _____ signs, _____ their _____.

EXAMPLES:

1.) 2.) 3.)

What Happened to the Guy Who Wanted to be a Human Cannonball at the Circus?

Do each exercise mentally. Write the letter of the exercise in the box containing the number of the correct choice.

(N) $\frac{1}{5}+\frac{2}{5}$ 4 $\frac{-1}{5}$ 12 $\frac{3}{5}$	(I) $1-\frac{1}{10}$ 13 $1\frac{1}{10}$ 7 $\frac{9}{10}$	(E) $1-\frac{1}{100}$ 17 $\frac{99}{100}$ 16 $\frac{1}{100}$	(D) $2-\frac{1}{3}$ 23 $1\frac{1}{3}$ 10 $1\frac{2}{3}$	(A) $8-\frac{1}{8}$ 19 $7\frac{3}{4}$ 25 $7\frac{7}{8}$
(E) $\frac{1}{5}-\frac{2}{5}$ 2 $\frac{-1}{5}$ 20 $\frac{3}{5}$	(H) $-1+\frac{-1}{10}$ 15 $\frac{-9}{10}$ 22 $-1\frac{1}{10}$	(A) $2\frac{1}{2}-1\frac{1}{4}$ 29 $1\frac{1}{2}$ 4 $1\frac{1}{4}$	(O) $\frac{-1}{7}-\frac{-15}{7}$ 19 2 9 -2	(E) $-2\frac{1}{2}-5\frac{1}{2}$ 27 -8 15 $-7\frac{1}{2}$
(D) $1\frac{1}{2}+\frac{1}{4}$ 13 $1\frac{3}{4}$ 30 $1\frac{1}{4}$	(A) $\frac{3}{4}+\frac{1}{2}$ 8 $\frac{2}{3}$ 29 $1\frac{1}{4}$	(T) $-1+\frac{1}{4}$ 21 $\frac{-3}{4}$ 3 $\frac{-1}{4}$	(S) $1\frac{1}{2}+\frac{3}{4}$ 5 $2\frac{1}{4}$ 8 $1\frac{3}{4}$	(D) $\frac{1}{2}-\frac{1}{3}$ 14 $\frac{1}{5}$ 18 $\frac{1}{6}$
(E) $-1+\frac{1}{2}$ 6 $-1\frac{1}{2}$ 23 $\frac{-1}{2}$	(I) $2-\frac{1}{4}$ 9 $1\frac{1}{2}$ 15 $1\frac{3}{4}$	(H) $-4+-1\frac{3}{5}$ 24 $-2\frac{3}{5}$ 1 $-5\frac{3}{5}$	(A) $1-\frac{11}{10}$ 11 $\frac{-1}{10}$ 16 $\frac{1}{10}$	(N) $\frac{-13}{9}+\frac{-5}{9}$ 30 -1 20 -2
(Y) $2\frac{1}{2}+2\frac{1}{2}$ 30 5 24 $4\frac{1}{2}$	(E) $1-\frac{9}{10}$ 9 $\frac{1}{10}$ 8 $\frac{-1}{10}$	(S) $6-\frac{-1}{2}$ 24 $6\frac{1}{2}$ 6 $5\frac{1}{2}$	(W) $1-\frac{99}{100}$ 14 $\frac{-1}{100}$ 3 $\frac{1}{100}$	(R) $\frac{1}{2}+\frac{1}{10}$ 16 $\frac{3}{5}$ 6 $\frac{1}{6}$
(D) $3+\frac{1}{8}$ 28 $3\frac{1}{8}$ 14 $2\frac{7}{8}$	(H) $\frac{1}{10}-1$ 26 $\frac{-1}{10}$ 6 $\frac{-9}{10}$	(M) $\frac{7}{25}+\frac{18}{25}$ 14 $\frac{1}{2}$ 26 1	(R) $\frac{99}{100}-1$ 8 $\frac{-1}{100}$ 23 $\frac{-99}{100}$	(F) $1-1\frac{1}{2}$ 20 $\frac{1}{2}$ 14 $\frac{-1}{2}$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Name: _____ Date: _____

MULTIPLYING SIGNED DECIMALS

(Lesson 2.3 for book resource)

REMEMBER: To multiply signed decimals:

1.) Determine the _____ of your _____ by using the rules for _____ _____.

2.) _____ the _____ as you would _____ _____.

3.) Place the _____ _____ in your _____!

** _____ the _____ behind the _____ _____ in the _____ of the problem. That number is the number of spaces you move "into" the product.

EXAMPLES:

1.) 2.) 3.)

APPLICATION:

You buy 16.34 pounds of potatoes for $2.15 per pound. What value represents your financial standing after the transaction?

FIND A MATCH

DIRECTIONS:
Each of the two blocks below is divided into 20 boxes. Boxes in the top block contain exercises and boxes in the bottom block contain their answers. Do the exercises and find your answers in the bottom block. Then write the word from the top box in the corresponding bottom box. Keep working and you will spell out a message.

① (2.4)(−0.39) IS	② (−0.87)(−15) THE	③ (−7.02)(5.5) BECAUSE	④ (−24.8)(−0.03) A
⑤ (78)(−7.8) BEST	⑥ (−0.019)(9.4) ONLY	⑦ (−8.025)(−100) TO	⑧ (8.025)(1000) THE
⑨ (63.92)(−0.08) ON	⑩ (−0.39)(−27.6) OF	⑪ (−93)(0.555) POPULAR	⑫ (0.4)(0.4)(−0.4) THERE'S
⑬ (−1.5)(−15)(−0.15) THE	⑭ (−0.05)(0.8)(−3) PLACE	⑮ (3.4)(−9)(0.01) ONE	⑯ (7)(−0.593)(−0.1) VISIT
⑰ (−538.9)(−10) WEIGHT	⑱ (0.029)(−42) MOON	⑲ (−0.8)(45.46) RESTAURANT	⑳ (−0.01)(−0.1)(−1) SIXTH

8025	−608.4	0.12	802.5	0.4151
0.744	−51.615	−36.368	−0.936	−5.1136
−3.375	−1.218	−38.61	−0.064	−0.1786
−0.306	−0.001	10.764	13.05	5389

Name: _____ Date: _____

DIVIDING SIGNED DECIMALS

(Lesson 2.3 for book resource)

REMEMBER: To divide signed decimals by signed decimals:

1.) Determine the _____ of your _____ by using the rules for _____ _____.

2.) _____ the _____ as you would _____.

- It's easier for us to change both the _____ into a _____ _____.
- To do this, we _____ the _____ by a power of _____ to convert it into a _____
- What you do to the _____, however, you MUST do to the _____.

EXAMPLES:

1.) 2.) 3.)

sign up

1. SIGN IN ANTIQUE STORE:

−4390	800	−0.0079	−379	−0.2	0.04	−70.9	−3.7	68.037	−275	800	−70.9	800	800	0.04

2. SIGN ON WATERBED:

−70.9	800	−379	−0.879	68.037	−4390	−5.008	68.037	4.39	−4390	−70.9	800	7.09	−0.879

3. SIGN ON LAUNDRY TRUCK:

0.083	800	7.09	−0.2	6.556	800	68	7.09	68.037	−3.7	2789.06	800	−70.9	68	−379	7.09	7.09	−70.9

TO DECODE THESE THREE SIGNS: Do any exercise below and find your answer in the code. Each time the answer appears in the code, write the letter of that exercise above it. Keep working and you will decode all three signs. Enjoy the signery!

(I) $-0.6 \div 3 =$	(A) $-2.274 \div 0.006 =$	(O) $-34.0185 \div -0.5 =$
(N) $-0.24 \div -6 =$	(W) $-0.00332 \div -0.04 =$	(H) $5.57812 \div 0.002 =$
(F) $4.395 \div -5 =$	(C) $-61.2 \div -0.9 =$	(E) $-3.2 \div -0.004 =$
(K) $-59.004 \div -9 =$	(Y) $0.35056 \div -0.07 =$	(M) $-0.0237 \div 3 =$
(T) $2.96 \div -0.8 =$	(R) $-439 \div 0.1 =$	(L) $-6.381 \div -0.9 =$
(U) $0.3073 \div 0.07 =$	(B) $2.2 \div -0.008 =$	(S) $7090 \div -100 =$

Name: _____ Date: _____

ADDING AND SUBTRACTING SIGNED DECIMALS

(Lesson 2.2 for book resource)

Objective: Apply the rules of adding and subtracting integers to determine the sum or difference of various signed fractions.

REMEMBER: To add and subtract signed decimals:

1.) _____ up the decimals points.

2.) Remember that 42 = 42. since the decimal point goes at the _____ of a number just like a _____ goes at the end of a sentence.

3.) Add _____ if needed.

4.) _____ or _____ just like you do with whole numbers.

5.) Bring _____ the decimal _____.

6.) Use the rules for integers to figure out the _____.

EXAMPLES:

1.) 2.) 3.)

Why is SPACE TRAVEL like a CHALKBOARD ?

TO ANSWER THIS QUESTION, FOLLOW THESE DIRECTIONS:

Draw a straight line connecting each exercise with its correct answer. Each line will cross a number and a letter. The number tells you where to put the letter in the row of boxes at the bottom of the page.