REMEMBER!!
BE RESPECTFUL

There are a million ways to lose a work day, but not even a single way to get one back

-Tom DeMarco and Timothy Liste

American Software Engineers

WARM UP

1) $-14.3+29.76=$

2) $18.03-59.77=$

3) $-85.09 \bullet -1.75=$

4) $19.60 \div -1.4=$

5) $.12\overline{)20.4}$

FIND THE GCF FOR THE FOLLOWING:

6) $36, 48$

7) $15, 35$

8) $24, 32$

9) $18, 27$

AGENDA

- Warm Up
- Multiplying & Dividing Fractions
- HW:

Warm Up
Answer Key

1) 15.46
2) - 41.74
3) 148.9075
4) - 14
5) 170

FRACTIONS:
Multiplying/Dividing

LESSON ESSENTIAL QUESTION:
How do we multiply and divide fractions effectively?

What is GCF?

Greatest Common Factor-the largest number that two or more numbers share as factors.

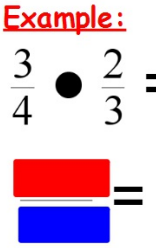
Example: GCF(12, 20)=

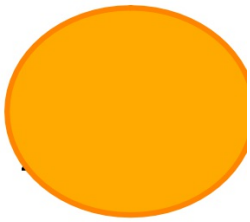
Traditional Method:
3 steps to multiplying fractions

1. Multiply the numerators (numbers above the fraction bar)
2. Multiply the denominators (numbers below the fraction bar)
3. Reduce (or simply) by dividing the numerator and denominator by their GCF.

Example:

$$\frac{3}{4} \bullet \frac{2}{3} =$$





FRACTIONS:
Multiplying/Dividing

LESSON ESSENTIAL QUESTION:
How do we multiply and divide fractions effectively?

Cross Cancelling Method:

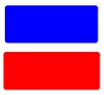
(works good for larger numbers)

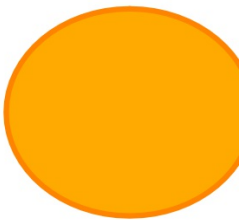
1. List the factors of the numbers diagonally across.
2. Divide each pair by their GCF.
3. Multiply the numerators and denominators straight across.

Example:

$$\frac{4}{27} \bullet \frac{9}{18} =$$

$$\frac{2}{3} \bullet \frac{1}{9} =$$





COMMERCIAL BREAK

TOPIC:

MULTIPLYING/DIVIDING INTEGERS

When multiplying or dividing two integers (positive and/or negative whole numbers), remember:

1. Multiply integers first

2. Same signs remain positive
   Ex positive ● positive = positive
   negative ● negative = positive

3. Different signs are negative
   Ex positive ● negative = negative
   negative ● positive = negative

$-5 \bullet 6 =$

$-9 \bullet -8 =$

$132 \div -12 =$

$\frac{-5}{9} \bullet \frac{18}{-25} =$

FRACTIONS:
Multiplying/Dividing

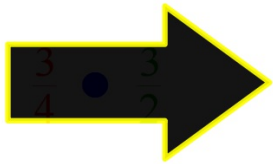
LESSON ESSENTIAL QUESTION:
How do we multiply and divide fractions effectively?

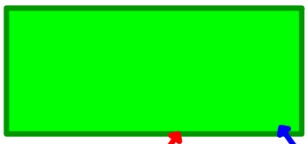
3 steps to dividing fractions

1. KEEP the first fraction
2. CHANGE ÷ to ●
3. FLIP the second fraction to its reciprocal.

Example:

$$\frac{3}{4} \div \frac{2}{3} =$$





IMPROPER FRACTION in simplest form. GRIDED RESPONSE ANSWER

Mixed number in simplest form. MULTIPLE CHOICE ANSWER

$$\frac{6}{7} \div \frac{2}{3} =$$

KCF $$\frac{6}{7} \bullet \frac{3}{2} =$$

Cross Cancel $$\frac{3}{7} \bullet \frac{3}{1} =$$

Multiply $$\frac{9}{7} = 1\frac{2}{7}$$

FRACTIONS:
Multiplying/Dividing

LESSON ESSENTIAL QUESTION:
How do we multiply and divide fractions effectively?

EXAMPLE 1	$\frac{4}{7} \bullet \frac{7}{12} =$	$\frac{4}{7} \div \frac{7}{12} =$
EXAMPLE 2	$\frac{2}{5} \bullet \frac{10}{12} =$	$\frac{2}{5} \div \frac{10}{12} =$
EXAMPLE 3	$\frac{8}{9} \div \frac{2}{3} =$	$\frac{2}{3} \div \frac{8}{9} =$

AGENDA

- Warm up
- Flash Back
- Cornell Notes: *Adding and Subtracting Rational Numbers*
- Exit Ticket

"In prosperity our friends know us;
in adversity we know our friends."
-John Churton Collins (1848-1908)

English Literary Critic

WARM UP- on page 15 on Interactive Notebook

1) $-\frac{12}{14} \bullet \frac{1}{6} =$

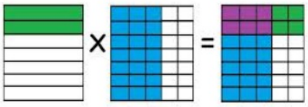
2) $-\frac{12}{14} \div -\frac{1}{6} =$

3) $\frac{-2}{10} \div \frac{-2}{5} =$

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

5. Ms. Moore purchased $1\frac{7}{8}$ lbs of fruit. If Ms. Moore eats $\frac{3}{8}$ lbs each day, how many days will the fruit last?

Multiplying Fractions



$\frac{2}{7} \times \frac{3}{5} = \frac{6}{35}$

FRACTIONS: Adding and Subtracting Fractions

LESSON ESSENTIAL QUESTION:
How do we add/subtract fractions effectively?

What is LCM?

Least Common Multiple-the smallest number, other than zero, that is a multiple of two or more numbers.

Example: LCM(12, 20)=

Traditional Method: 4 steps to adding/subtracting fractions

1. Find the LCM of the denominators.
2. Rewrite fractions using common denominators.
3. Add/Sub NUMERATORS.
4. ALWAYS REDUCE (if possible)

Example:

LCM (3,4)

$$-\frac{3}{4}+\frac{2}{3}=$$

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

$$+$$

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

FRACTIONS:
Adding and Subtracting Fractions

LESSON ESSENTIAL QUESTION:
How do we add/subtract fractions effectively?

Butterfly Method: 4 steps to adding/subtracting fractions

1. Multiply numbers diagonally across. Write their product at the top.
2. Multiply the denominators. Write their product at the bottom.
3. Add/Subtract the NUMERATORS. *Keep* the denominator!
4. ALWAYS REDUCE (if possible)

Example:

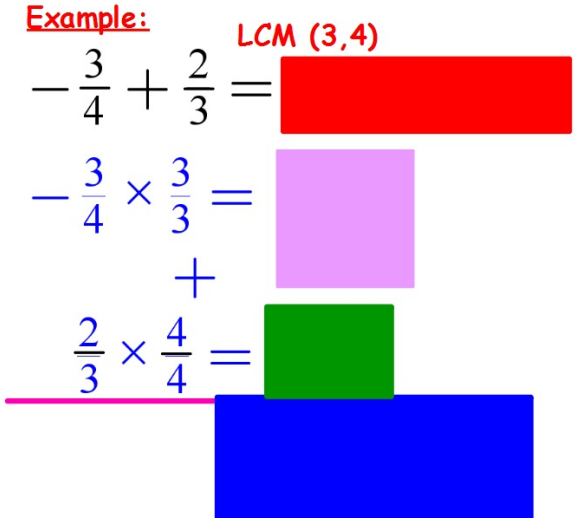
LCM (3,4)

$$-\frac{3}{4}+\frac{2}{3}=$$

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

$$+$$

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



FRACTIONS:
Adding Fractions

LESSON ESSENTIAL QUESTION:
How do we add and subtract fractions effectively?

EXAMPLE 1

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

EXAMPLE 2

$2\frac{2}{3} + 1\frac{3}{5} =$

EXAMPLE 3

$-7\frac{8}{9} + \left(-\frac{2}{3} \right) =$

FRACTIONS:
Adding/Subtracting

LESSON ESSENTIAL QUESTION:
How do we add and subtract fractions effectively?

EXAMPLE 1

$$-\frac{3}{7} - \frac{1}{8} =$$

EXAMPLE 2

$$\frac{2}{3} - 8 = \square$$

Error

EXAMPLE 3

$$1\frac{1}{5} - \frac{6}{15} = \frac{12}{15} = \square$$

What could the Error be?

AGENDA

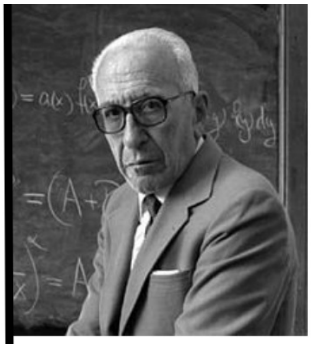
- Warm up: Fraction Puzzle
- Review Homework
- Word Problems
- Exit Ticket

keep it change it flip it

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

$\frac{1}{2} \times \frac{4^2}{1} = \frac{2}{1} = 2$

kept changed flipped



An Argentinian mathematician who developed the theory of singular integral operators.

Alberto Pedro Calderón
(1920-1998)

WORD PROBLEMS: Adding Rational #s	LESSON ESSENTIAL QUESTION: How do we solve word problems with rational numbers effectively?	
EXAMPLE 1	**A book case measures 40 1/3 in wide. If there are five shelves, how much space is available for storage?**	
EXAMPLE 2	Mary needed 5 2/5c of sugar to make the pecan pies. After she bought some from the store and made the pies, she had 4/5 left over. How many cups of sugar did she buy?	
		

WORD PROBLEMS: Subtracting Rational #s

LESSON ESSENTIAL QUESTION:

How do we solve word problems with rational numbers effectively?

EXAMPLE 1

A book case measures 50 1/2 in wide. If you want to shorten the width 4 1/3 in to make room for more furniture, how wide will the book case be?

EXAMPLE 2

Mary needed 4 2/5c of sugar to make the pecan pies. After she bought 6 1/2c from the store and made the pies, how many cups of sugar did she left?

COMMERCIAL BREAK

TOPIC: USING EXPONENTS

When operating with exponents, remember:

- The exponent tells us how many times to multiply the base.

$$2^1 = 2$$
$$2^2 = 2 \bullet 2 = 4$$
$$2^3 = 2 \bullet 2 \bullet 2 = 8$$

- Fractions raised to an exponent, move the exponent into the numerator and denominator.

$$\left(\frac{2}{3}\right)^3 = \frac{2^3}{3^3}$$

$$\frac{2 \bullet 2 \bullet 2}{3 \bullet 3 \bullet 3} = \frac{8}{27}$$

$6^2 =$

$11^2 =$

$3^4 =$

$4^3 =$

$\left(\frac{1}{7}\right)^3 =$

Explain why 4^2 has the same result as 2^4

EXIT TICKET

What is the decimal equivalent to 11/40?

What is the fraction equivalent to 0.24? 6/25

What is the sum?

$\frac{8}{12} + \frac{5}{9} =$

-2.4 + 1.6