AM STAAR Session #2 Rational Number Operations

Thursday, March 21, 2013

Math Objective **8.2B** Add, subtract, multiply, and divide rational numbers in problem situations.

### Addition and Subtraction of Fractions

• First change any subtraction problems to addition.

Think: “Keep, change, change”. Keep the first number, change subtraction to addition, and change the sign of the second number.

• Decide if you should add or subtract. If the signs are the **same**, you will **add** and keep the sign. If the signs are **different**, you will **subtract** and take the sign of the number with the largest absolute value (what you have more of).

• Write your problems vertically to solve. (straight up and down)

• Rewrite each fraction with a **common denominator.**

• Add or subtract the numerators (top #’s) only. Keep your denominator the same. If subtracting, be careful when you need to **borrow**. (When you borrow, you get your new numerator by adding the top and bottom numbers of the fraction you have.)

• Your final answers must be proper fractions in lowest terms.

Solve the following equations. Write your answers in simplest form.

1.  2. 

**Addition and Subtraction of Decimals**

* First change any subtraction problems to addition. Think: “Keep, change, change”.
* Decide if you should add or subtract. Same signs, add. Different signs, subtract.
* Take sign of higher absolute value.
* Write the problems vertically and solve. Keep the decimals in line in your problem and answer

3. –285.6 + 20.01 4. 98.7 – (-17.23)

### Multiplication and Division of Fractions

• First determine if your answer should be positive or negative. Same signs=positive. Different signs=negative.

• Write your problems horizontally to solve (side by side).

• For multiplication and division you do NOT need a common denominator.

• Rewrite any mixed numbers as improper fractions first.

• If you have a whole number, you need to write it over 1.

• If you have division, you need to rewrite it as a multiplication problem. We leave the first fraction the same, change division to multiplication, “flip” the second fraction, and multiply. Think: “Keep, change, flip”.

• Multiply your numerators and your denominators. “Top times top and the bottom times the bottom”. Write your answers in lowest terms.

5.  6. 

**Multiplication and Division of Decimals**

* First determine if your answer should be positive or negative. For multiplication & division if you have 2 like signs, your answer is positive. If you have 2 unlike signs, your answer is negative.
* Solve like you would any other multiplication or division problem.
* Place your decimal in the correct spot. For multiplication, count out the number of places you have in your problem. For division, line the decimal place up outside the bracket.

7. (-4.02)(-12.8) 8. 

**STAAR Practice**

1. Jackson works 40 hours per week at Pizza Express. He earns $8.50 per hour plus $1.25 per delivery. If he made 25 deliveries last week, what would be his total earning for the week?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



2. A recipe that makes $1\frac{1}{2}$ dozen cookies requires $\frac{3}{4}$ bags of chocolate chips. Alexis wants to make 6 dozen cookies and each bag of chocolate chips is $1.75, how much will she spend on chocolate chips?

1. $3.00 C. $7.00

B. $5.25 D. $10.00

3. The illustration shows the prices of fruit at local grocery store.

|  |  |
| --- | --- |
| Apples | $1.29 to $1.59 per lb |
| Strawberries | $2.39 to $2.79 per lb |
| Bananas | $0.39 to $0.49 per lb |
| Pineapples | $1.89 to $2.19 per lb |
| Grapes | $2.39 to $2.79 per lb |

If Lilly wants to by 1.5 pounds of each to make fruit salad for a party, what is the most **reasonable** total that she will spend on fruit?

1. $20 C. $13
2. $8 D. $10