

Student Name _____

Adding and Subtracting Rational Numbers Guided Lesson Explanation

1) Step 1: Find a common denominator for all the fractions.

In this case, 60 works for us.

$$\frac{8}{10} + \frac{11}{15} - \frac{2}{5} - \frac{18}{20} = \frac{48}{60} + \frac{44}{60} - \frac{12}{60} - \frac{54}{60}$$

Step 2: Since the operations are only addition and subtraction we process each operation from left to right.

$$\frac{48}{60} + \frac{44}{60} - \frac{12}{60} - \frac{54}{60}$$

$$\frac{92}{60} - \frac{12}{60} - \frac{54}{60}$$

$$\frac{80}{60} - \frac{54}{60}$$

$$\frac{26}{60}$$

Step 3: Reduce the fraction.

$$\frac{26}{60} = \frac{13}{30}$$



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2) $11 - 17 + 16$

Although this problem does not look tough, many people get it wrong. We need to understand the order of operations. The order of operations is most commonly remembered by the acronym PEMDAS.

We need to remember that multiplication and division are at the same priority level. So are the operations of addition and subtraction. This means that if we are presented with the option to process an addition or a subtraction operation at the same time, we should process them right to left.

Let's size up this problem:

$$\begin{array}{ccccccc} 11 & - & 17 & + & 16 & & \\ & & \text{(Process 1st)} & & \text{(Process 2nd)} & & \end{array}$$

$$11 - 17 + 16$$

$$-6 + 16$$

$$10$$

3) In this problem we are presented with the same operations challenge (addition and subtraction operations at the same level). We will process each operation left to right.

$$86.142 - 20.217 + 59.32$$

$$65.925 + 59.32$$

$$125.245$$

