Lesson 8: Applying the Properties of Operations to Add and Subtract Rational Numbers

Problem Set

1. Represent each sum as a single rational number.

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| * 1. $-14+\left(-\frac{8}{9}\right)$
 | * 1. $7+\frac{1}{9}$
 | * 1. $-3+\left(-\frac{1}{6}\right)$
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Rewrite each of the following to show that *the opposite of a sum is the sum of the opposites.* Problem 2 has been completed as an example.

1. $-\left(9+8\right)= -9+(-8)$

 $-17=-17$

1. $-\left(\frac{1}{4}+6\right)$
2. $-\left(10+\left(-6\right)\right) $
3. $-\left(\left(-55\right)+\frac{1}{2}\right)$

Use your knowledge of rational numbers to answer the following questions.

1. Meghan said the opposite of the sum of $-12$ and $4$ is $8$. Do you agree? Why or why not?
2. Jolene lost her wallet at the mall. It had $\$10$ in it. When she got home, her brother felt sorry for her and gave her $\$5.75$. Represent this situation with an expression involving rational numbers. What is the overall change in the amount of money Jolene has?
3. Isaiah is completing a math problem and is at the last step: $25-28\frac{1}{5}$ . What is the answer? Show your work.
4. A number added to its opposite equals zero. What do you suppose is true about *a sum added to its opposite*?

Use the following examples to reach a conclusion. Express the answer to each example as a single rational number.

* 1. $\left(3+4\right)+\left(-3+ -4\right)$
	2. $\left(-8+1\right)+\left(8+(- 1\right))$
	3. $\left(-\frac{1}{2}+\left(-\frac{1}{4}\right)\right)+\left(\frac{1}{2}+\frac{1}{4}\right)$