

NAME _____

Module 3 Integers
Lesson 3 Subtracting Integers

Challenge Problems

3.3

Set 1

1 Use integer counters to show $3 - (-4)$ is *not* the same as $-4 - 3$.

2 Is subtraction of integers commutative? Explain.

3 If a positive integer is subtracted from a negative integer, will the difference be positive, negative, or zero? Explain.

Set 2

1 When subtracting a negative number, is the difference greater than or less than the original number? Explain.

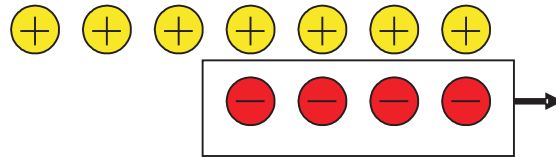
2 When subtracting a positive number, is the difference greater than or less than the original number? Explain.

3 When will the difference of two integers be zero? Explain.

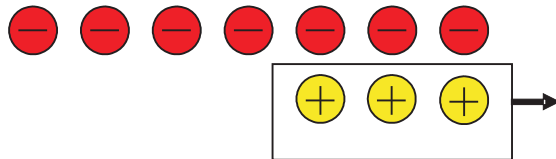
Possible Answers

Set 1

1. $3 - (-4) = 7 \neq -4 - 3 = -7$



$3 - (-4) = 7$



$-4 - 3 = -7$

2. No, if the order of the numbers in a subtraction problem are switched, the answers are different. $1 - 2 = -1$ is not the same as $2 - 1 = 1$.
3. When you subtract a positive integer, you add its opposite, which is a negative integer. So, you are adding two negative integers. The result is always a negative integer.

Set 2

1. The difference is greater than the original number because when you subtract a negative number, you add its opposite, which is positive. If you add a positive number to any number, the sum is always greater than the original number.
2. The difference is less than the original number because when you subtract a positive number, you add its opposite, which is negative. Adding a negative number to a number makes the original number smaller. If you subtract a positive number, the difference will always be less than the original number.
3. The difference between two integers equals zero when the two integers are equal.