

Algebra 1

Chapter 1

Section 1-5

May 13-10:02 PM

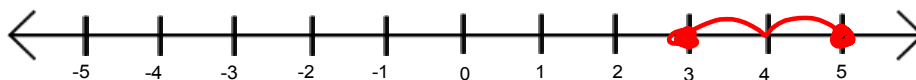
Concepts

- Additive Inverse - The opposite of a number
- Opposites - Two numbers that have the same distance from zero
- Absolute Value - A number's distance from zero

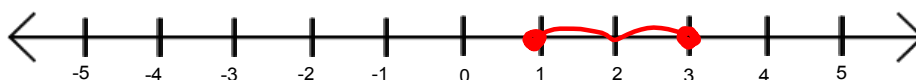
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Addition and Subtraction

$$3 + 2 = 5$$



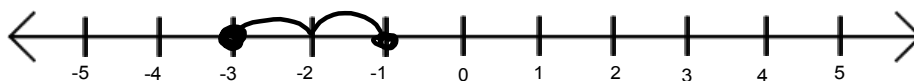
$$3 - 2 = 1$$



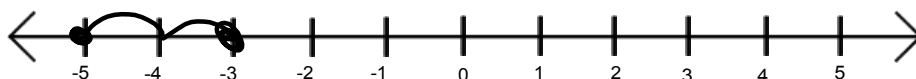
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Addition and Subtraction

$$-3 + 2 = -1$$



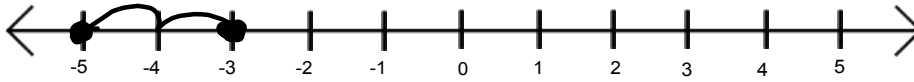
$$-3 - 2 = -5$$



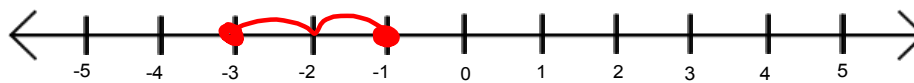
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Addition and Subtraction

$$-3 + (-2) = -5$$



$$-3 - (-2) = -1$$



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Additive Inverse

For every real number there is an additive inverse so that the sum of the two numbers is zero.

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Find each numbers additive inverse

$$11$$

$$-11$$

$$-9.5$$

$$9.5$$

$$\frac{17}{14}$$


$$-\frac{17}{14}$$

$$0$$

$$0$$

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Absolute Values

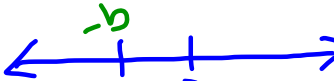


A number line with arrows at both ends. A vertical tick mark is labeled '0' and another is labeled 'a'. A red double-headed arrow spans from 0 to a.

If a is positive (or zero)...

$$|a| = a$$

$|a|$



A number line with arrows at both ends. A vertical tick mark is labeled 'a' and another is labeled '0'. A blue double-headed arrow spans from a to 0.

If a is negative...

$$|a| = -a$$

or

$$|-b| = b$$

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Absolute Values

$$|6| = 6$$

$$|-12| = 12$$

$$|5 - 10|$$

$$|-5| = 5$$

$$|x + 7| \text{ when } x = \underline{-7}$$

$$|-7 + 7|$$

$$|0| = 0$$

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Simplifying by Substitution

$$x = -5, y = 4$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ x + (y - 2)^3 \\ (-5) + (4 - 2)^3 \end{array}$$

$$-5 + (2)^3$$

$$-5 + 8$$

$$3$$

$$a = -1, b = -10, c = 3$$

$$(b - c) - c \cdot (a + c)$$

$$(-10) - (3) - (3) \cdot ((-1) + (3))$$

$$-13 - 3(2)$$

$$-13 - 6$$

$$-19$$

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Golf

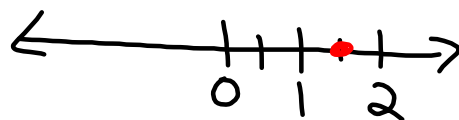
In 2007 Zach Johnson won the Masters golf tournament with a score over par. His four daily scores for Thursday through Sunday were -3 , -1 , $+1$, and $+4$. What was his final score?

$$-3 + \overbrace{(-1) + 1}^{\text{opposites}} + 4 = +1$$

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Distance

Tom lives on Straight Street. The grocery store and pharmacy are also on Straight Street. Tom travels past the pharmacy to the grocery store, a total of 2 miles. He then travels a half mile back to the pharmacy. How far is Tom's house from the pharmacy? How far is the pharmacy from Tom's house?



$$2 - \frac{1}{2} = 1\frac{1}{2} \text{ miles}$$

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Distance

Ray pays \$25.99 for a three pack of headphones. He then sells one pair to a friend for \$5 and another pair in an online auction for \$9.45. What is the overall change in the amount of money Ray has? What does this answer mean in words?

$$-\$25.99 + \$5 + \$9.45$$

$$-20.99 + 9.45$$

$$-\$11.54$$

Ray has \$11.54 less than before
he bought headphones

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