

Section 2.1 Integers & Rational Numbers

Objective: To classify types of numbers and graph on a number line.

Whole Numbers

Integers

* Positive Integers

* Negative Integers

Rational Numbers

Classify the type of number the following is.
Then list from least to greatest.

a) 3.6, -1.5, $-\frac{3}{4}$, -0.31, $\frac{2}{3}$

Example Graph the following on a number line

a) -3

b) 4

What is the opposite of 5?

What is the opposite of -12.4?

Absolute Value

$$|x| =$$

Conditional Statement

Hypothesis- if part of stmt

Conclusion - then part of stmt

Counterexample

Section 2.2 Addition of Positive and Negative Numbers

Objective: To be able to add positive and negative numbers

Examples

a) $7 + 4 = 11$

b) $8 + -5 = 3$

c) $-12 + 5 = -7$

d) $-18 + -22$

Practice Problems

a) $9 + -5$

b) $-5.3 + -4.9$

c) $-17 + 8$

Properties of Addition

EXAMPLE

| | | |
|--------------------|-----------------------------|---------------------------|
| <u>Commutative</u> | $a + b = b + a$ | $4 + 8 = 8 + 4$ |
| <u>Associative</u> | $(a + b) + c = a + (b + c)$ | $(4+6) + 12 = 4 + (6+12)$ |
| <u>Identity</u> | $a + 0 = a$ | $9 + 0 = 9$ |
| <u>Inverse</u> | $a + -a = 0$ | $22 + -22 = 0$ |

Section 2.3 Subtraction of Real Numbers

Subtraction is the addition of an opposite or negative number

$$a - b = a + -b$$

Examples

a) $-12 - 19 = -12 + -19 = -31$

b) $15 - 24 = 15 + -24 = -9$

c) $11.7 - -5 = 11.7 + 5 = 16.7$

Practice Problems

a) $-24 - -9$

b) $-12 - 30$

c) $1/3 - 1/2$

Evaluate if $x = -3$ and $y = 5.2$

d) $x - y + 8$