# Study Guide

# Chapter 2 Test (P1)

## 2.1: Use Integers and Rational Numbers

**- Be able to classify numbers as whole, integer, rational and irrational using all names that apply**

**Ex:** $-7$

Integer, Rational

**Ex:** $\sqrt{49}$

Whole, Integer, Rational

**Ex:** $\frac{1}{2}$

Rational

- **Be able to order numbers from least to greatest**

**Ex:** $-\frac{1}{5}, 6, -1, \sqrt{9}$

$-1, -\frac{1}{5}, \sqrt{9}, 6$

- **Be able to find absolute value and opposites of numbers**

**Ex:** Evaluate: $-x + |x|$ if $x = -2$

$- - 2 + |-2|$
$2 + 2$
$4$

## 2.2: Add Real Numbers:

**- Be able to add numbers with same signs and different signs**

**Ex:** $-5 + (-7)$

$-12$

**Ex:** $-2 + (-14)$

$-16$

**Ex:** $4 + (-12)$

$-8$

**Ex:** $-5 + 20$

$15$

**Ex:** $-1 + (-5) + (-x)$ when $x = 2$

$-1 + (-5) + (-2)$
$-6 + -2$
$-8$

**Ex:** $|x| + (-3) + 7$ $x = -3$

$|-3| + (-3) + 7$
$3 + -3 + 7$
$7$

## 2.3 Subtract Real Numbers:

- **Be able to rewrite subtraction as addition and follow addition rules**

**Ex:** $-11 - 21$

$-11 + -21$
$-32$

**Ex:** $-18 - (-9)$

$-18 + 9$
$-9$

**Ex:** $12 - (y - x)$

$x = 2 \quad y = -3$
$12 - (-3 - 2)$
$12 - (-3 + -2)$
$12 - (-5)$
$12 + 5$
$17$

## 2.4 Multiply/Divide Real Numbers

- **Be able to multiply and divide numbers with same signs and different signs**

**Ex:** $(-6)(-2)$

$12$

**Ex:** $3(-7)$

$-21$

**Ex:** $-5(-6)(-2)$

$30(-2)$
$-60$

**Ex:** $14 \div (-2)$

$-7$

**Ex:** $-80 \div (-10)$

$8$

**Ex:** $-12 \div 3$

$-4$

**Ex:** $13 \div \left(-4\frac{1}{3}\right)$

$\frac{13}{1} \div -\frac{13}{3}$

**Ex:** $\frac{4x}{3y + x}$ $x = 6$ and $y = -8$

$\frac{4(6)}{3(-8)+6}$

$\frac{24}{-24+6}$

$\frac{24}{-18}$

$-\frac{4}{3}$

## 2.5: Apply the Distributive Property

- **Be able to use the distributive property and identify and combine like terms:**

**Ex:** $2(x+7)$

$2x + 14$

**Ex:** $-8(p-3)$

$-8p + 24$

**Ex:** $3(m+5) + -10$

$3m + 15 + -10$
$3m + 5$

**Ex:** $2(r+4) + 6r$

$2r + 8 + 6r$
$8r + 8$

**Ex:** $4x + 7x$

$11x$

**Ex:** $2x - 5x$

$-3x$

**Ex:** $6 + 8y - 8 - 12y$

$-4y + -2$

## 2.7: Find Square Roots and Compare Real Numbers

- **Be able to evaluate square roots, estimate square roots and order square roots**

**Ex:** $\sqrt{121}$

11

**Ex:** Estimate $\sqrt{72}$ to the closest integer

$\sqrt{64}$ $\sqrt{72}$ $\sqrt{81}$

8 and 9

**Ex:** $\pm\sqrt{25}$

$\pm 5$

**Ex:** $-\sqrt{36}$

$-6$