

Semester 1 Exam

Chapters 1 - 3

- 55 questions. 100 points
- #1-20 Matching (1pt). #21-55 Problems(2pt).
- No calculators
- I will have scrap in room if needed
- Bring something to do if finished early
- Use pencil or black/blue pen. Nothing else!!!
- Study

Chapter 1 – Expressions, Equations, Functions

- **Terms:**
 - Variable
 - Order of Operations
 - Sum, Difference, Product, Quotient
 - Equation
 - Domain
 - Range
 - Function

- **Evaluate:**

- Use Order of Operations

- Substitute number for variable

- Examples: $2 + 3^2 \cdot 4$

$$2 + 9 \cdot 4$$

$$2 + 36$$

$$38$$

- $2x + 5$ if $x = 3$

$$2(3) + 5$$

$$6 + 5$$

$$11$$

- **Write Expression or Equation:**
- Use symbols for words: +, -, x, /
– Is means =
- Example: the sum of x and 3
$$x + 3$$

Chapter 2 – Solving Linear Equations

- Terms:
 - 5 sets of Real Number System
 - Natural, Whole, Integer, Rational, Irrational
 - Inverse Operations
 - Ratio
 - Proportion

- **Solve the Equation.**

Steps:

- 1. Simplify each side: Combine like terms
 - Get rid of parenthesis
- 2. Use inverse operations: + or –
 - Get x on one side = number
- 3. Use inverse operations: x or ÷ to solve
- Example: $12x - 21 = 4$

- To solve **proportions**:

- Cross Multiply

- Example: $\frac{2}{3} = \frac{x+1}{7}$

$$14 = 3(x + 1)$$

- Then solve

- Solve the Equation for y in terms of x
- Get the y alone

- Example: $12x - 3y = 18$

$$-3y = 18 - 12x$$

$$y = -6 + 4x$$

Chapter 3 – Graphing Linear Equations

- Plot Points:
- Describe Location (Quadrant or axis)

- **Graph the Line:**
 - 3 ways to do it
 - 1. Make x/y chart
 - 2. Use x-intercept, y-intercept
 - 3. Use slope and y-intercept (m and b)

Make x/y Chart

- Pick 3 values for x
- Plug them in to find the y values

Use Intercepts

- Let $x = 0$ to get y -intercept
- Let $y = 0$ to get x -intercept

Use Slope and Intercept

- Get y alone
- Pick out slope (m)
- Pick out y -intercept (b)

- Find the slope with 2 points (use formula)
- Find the slope and y-intercept (from equation)