Algebra 1 Exam 2 Review
Chapters 4 and 5 and 6

Exam

- 50 questions; 2 points each
- #1-13 Matching
- #14-23 Chapter 4
- #24-46 Chapter 5
- #47-50 Chapter 6
- Bring pencils, no calculators
- I will have scrap if needed

Matching

- #1-13 Terms
- Standard Form: $Ax + By = C$
- Slope-Intercept Form: $y = mx + b$
- Point – Slope Form: $y - y_1 = m(x - x_1)$
- Parallel Lines: same slope
- Perpendicular Lines: negative reciprocals
- Absolute Value: 2 answers
- Graph Inequalities: shade

Chapter 4
Writing Linear Equations

- **Write Equation: given m and b**

  m = 2 , b = 4 Answer: y = 2x + 4

- **Write Equation: given m and point(x,y)**

  (1,2), m = 3 y – 2 = 3(x – 1)

  Answer: y = 3x + 5

- **Write Equation: given 2 points**

  (1,2) and (3,4)

  First find slope: m = $\frac{4-2}{3-1}$ = 1

  Then: y – 2 = 1(x – 1)

  Answer: y = 1x + 1

Parallel and Perpendicular

- **Parallel** to $y = 2x - 1$ through $(4,5)$
- $m = 2$ $y - 5 = 2(x - 4)$ $\rightarrow$ $y = 2x - 3$

- **Perpendicular**: $y = 2x - 1$ through $(4,5)$
- $m = \frac{-1}{2}$ $y - 5 = \frac{-1}{2}(x - 4) \rightarrow y = \frac{-1}{2}x + 7$

Chapter 5: Solving and Graphing Linear Inequalities

- **To solve inequalities:**
  - 1. Distribute through parenthesis
  - 2. Combine like terms
  - 3. Add or subtract
  - 4. Multiply or divide (*caution when negative; reverse)

  - Ex: $2(x + 3) - 5 < 11$
  - $2x + 6 - 5 < 11$
  - $2x + 1 < 11$
  - $2x < 10$
  - $x < 5$

And/Or

- **OR**
- $2x < 10$ or $3x > 21$
- $x < 5$ OR $x > 7$

- **AND**
- $15 < 2x + 1 < 23$
- $14 < 2x < 22$
- $7 < x < 11$

- Graph is on number line

Absolute Value

- **Three Types**:

1. $|x + 1| = 6$ Solve: x + 1 = 6 and x + 1 = -6

   x = 5 and x = - 7

2. $|x + 1| > 6$ Solve: x + 1 > 6 OR x + 1 < -6

   x > 5 OR x < -7

3. $|x + 1| < 6$ Solve: -6 < x + 1 < 6

   -7 < x < 5

Graphing Inequalities

- 2 Types:
- 1. Slope form: pick out m= b=
- 2. Intercept Form: pick out x = y =

- Pick test point (0,0) if works **SHADE** the point
- Otherwise **shade** other points
- Remember: solid or dashed

Chapter 6: Systems

- A system is 2 equations.
- The solution is (x, y)
- To Solve:
  - Use Graphing (point where they cross)
  - Use Substitution
  - Use Elimination.
    - Use Elimination with Multiplication first