**Algebra Test Study Notes**

**Test Date –Monday, 21 January 2011**

**Unit 6 Systems of Equations**

Solving Systems of Equations with Graphing

* + You may need to graph the lines, or they may already be graphed
  + If you have to graph a line, you may need to solve for y to aid graphing
* When the lines cross, the intersection is the one solution
* If the lines are parallel, there is no solution
* If the equations refer to the same line, there are an infinite number of solutions

Solving Systems with Substitution

* If a variable coefficient is one (or negative one) you can substitute its value into the other equation and solve for the other variable
* When the “other” variable is known, substitute back in an original equation for the value of the first variable

Solving Systems with Addition/Subtraction

* If two variables have the same value coefficient with opposite signs, add the two equations together to eliminate that variable
* Solve for the remaining variable
* Substitute variable value into one of the original equations to complete
* If variables have same coefficient with same sign, add the negative

Solving Systems with Multiplication

* If no coefficients have the same value, then multiply one or both equations so that two coefficients do have the same value, with opposite signs
* Solve the problem the same as with addition/subtraction

Strategy

* Be prepared to decide for yourself the best method to solve a problem
* Take time to make this decision, sometimes an shorter method exists

Solving Systems of Inequalities

* Systems of inequalities have a range of possible answers, so the result is most easily displayed on a graph
* Graph the lines from each equation
  + Dashed lines for less than or greater than
  + Solid lines for less than or equals to or greater than or equals to
* Shade each region of the graph
  + Shade above the line for greater than
  + Shade below the line for less than
* One are of the graph is likely shaded twice, this is the answer, darken this area
* If the lines are parallel there may be no solution, or a wide band of possible answers

No notes may be used on the test

No formulas will be provided