Exam 4 Review

- 1. solving systems of linear equations
 - a. Graphical method
 - i. Graph the two lines and look for their intersection.
 - ii. Always be very careful and as accurate as possible with your graphs.
 - iii. Check your 'guess' in both original equations.
 - b. Substitution method
 - i. Use one of the equations to solve for one of the variables.
 - ii. Substitute the expression from step i into the *other* equation.
 - iii. Solve the resulting equation.
 - iv. Substitute the value of the variable into one of the original equations and solve for the other variable.
 - v. Check your solution in both original equations.
 - c. Addition/elimination method
 - i. Decide which variable to eliminate.
 - ii. Multiply one or both equations by appropriate constants so that the variable has opposite coefficients.
 - iii. Add the two resulting equations.
 - iv. Solve the equation in one variable from step iii.
 - v. Substitute the value of the variable into one of the original equations and solve for the other variable.
 - vi. Check your solution in both original equations.
- 2. special cases
 - a. no solutions (inconsistent)
 - i. parallel lines
 - ii. substitution and addition methods yield something like 0 = 5.
 - b. infinitely many solutions (dependent)
 - i. same line
 - ii. substitution and addition methods yield something like 0 = 0.
- 3. application problems

use the same techniques as in chapter 2 (see the exam 2 review)

- 4. graphing linear inequalities
 - a. graph the lines as if it were '='
 - i. for \leq or \geq
 - ii. ----- for < or >
 - b. pick a *test point* not on the line -(0, 0) is usually a good one
 - c. if the test point satisfies the inequality, then shade that side, otherwise shade the other side