Chapter 7: Systems of Equations and Inequalities
Study Guide

7.1: Solve Systems of Equations by Graphing:

- Be able to identify an ordered pair as a solution to a system

    Ex: Is (5, 2) a solution to the system: $2x - 3y = 4$
    $2x + 8y = 11$

- Be able to find a solution to a system of equations by graphing

    Ex: Solve the system by graphing: $2y - 4x = 12$
    $6x + 12y = -6$

7.2: Solve Systems of Equations by Substitution:

- Be able to solve a system of equations by substitution

    Ex: $y = x - 2$ **Ex:** $5x + 2y = 9$
    $x = 17 - 4y$ $x + y = -3$

    Ex: $y = x - 4$
    $y = 18 + 2x$

- Be able to write a linear system and solve

    Ex: During a football game the parents of the football players sell pretzels and popcorn to raise money for new uniforms. They charge $2.50 for a bag of popcorn and $2 for a pretzel. The parents collect $336 in sales during the game and sell twice as many bags of popcorn as pretzels. How many bags of popcorn do they sell? How many pretzels?

7.3-7.4 Solve Systems of Equations by Eliminating a Variable:

- Be able to add or subtract equations to eliminate a variable in order to solve a system

  Ex: $4x - 3y = 5$
  $-2x + 3y = -7$

  Ex: $6x - 4y = 14$
  $3x - 4y = 1$

  Ex: $3x + 4y = -6$
  $2y = 3x + 6$

- Be able to multiplying equations first, then eliminate a variable, in order to solve a system

  Ex: $x + y = 2$
  $2x + 7y = 9$

  Ex: $4x - 3y = 8$
  $5x - 2y = -11$

7.5: Special Types of Linear Systems:

- Be able to identify when a system of equations has one solution, no solution or infinite solutions by solving using any method.

  Ex: Solve by graphing:
  $3x + 2y = 10$
  $y = -\dfrac{3}{2}x + 1$
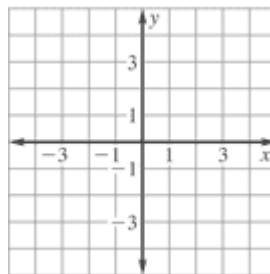
  Ex: Solve by substitution:
  $x - 2y = -4$
  $y = \dfrac{1}{2}x + 2$

  Ex: Solve by elimination:
  $2x - 3y = 6$
  $2x - 3y = -4$

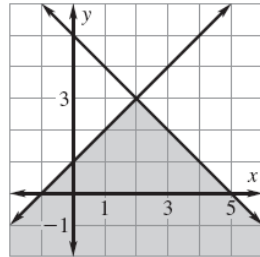- Be able to identify the number of solutions to system without actually solving it

  Ex: $5x + 3y = 6$
  $-5x - 3y = 3$

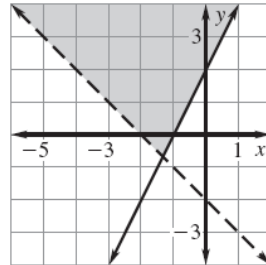 **Ex:** $y = 2x - 4$
  $-6x + 3y = -12$

7.6: Solve Systems of Linear Inequalities:

- Be able to identify a solution to a system of linear inequalities
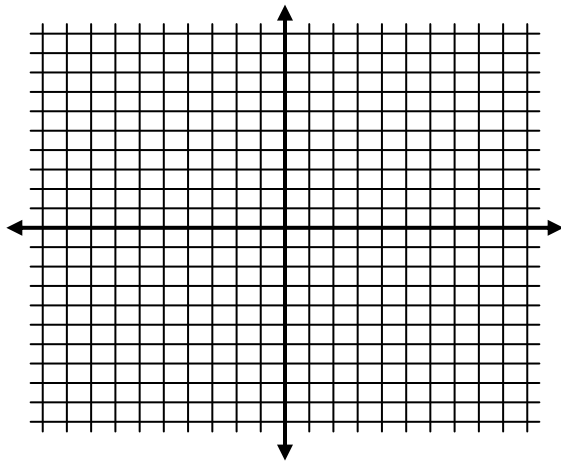 **Ex:** Is (2, 1) a solution?   **Ex:** Is (–2, 0) a solution?

- Be able to graph a system of linear inequalities and identify solutions
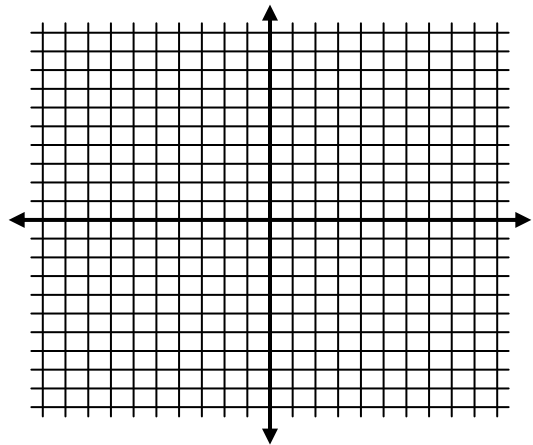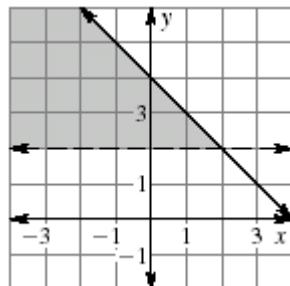 **Ex:** $x < 8$ **Ex:** $x \geq 0$
  $\quad\;\; x - 4y \leq -8$ $\quad\;\; y \geq 0$
  $\qquad\qquad\qquad\qquad\qquad\qquad\qquad\quad 6x - y < 10$

- Be able to write a system of linear inequalities given the graph
  Ex: **Ex:**
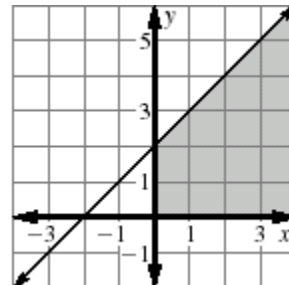
Extra Practice:

Where to find:	**Topics Covered:**
- Page 441: 1 – 9	Graphing/Substitution
- Page 450: 50 – 52	Graphing
- Page 457: 1 – 12	Elimination
- Page 471 – 472: 36 – 41	Systems of Inequalities Word Problems
- Page 472: 48 – 53, 1 – 9	Special Types of Systems Graphing Systems of Inequalities Systems Practice (General)
- Page 473: 1 – 7	Word problem practice
- Page 475 – 479:	Entire Chapter Review/Test