## 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

$$2y - 4x = 12$$
$$6x + 12y = -6$$



## 7.2: Solve Systems of Equations by Substitution:

- Be able to solve a system of equations by substitution

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

**Ex:** y = x - 4y = 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 = 143x - 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 = 22x + 7y = 9**Ex:** 4x - 3y = 85x - 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:





<b>Ex:</b> Solve by substitution:	<b>Ex:</b> Solve by elimination:
x - 2y = -4	2x - 3y = 6
$y = \frac{1}{2}x + 2$	2x - 3y = -4

- Be able to identify the number of solutions to system without actually solving it Ex: 5x + 3y = 6 -5x - 3y = 3Ex: 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?







- Be able to graph a system of linear inequalities and identify solutions



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





Extra Practice:

Where to find:	<b>Topics Covered:</b>
- 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