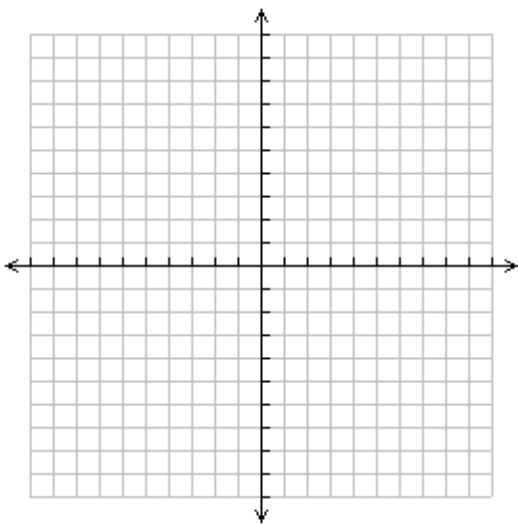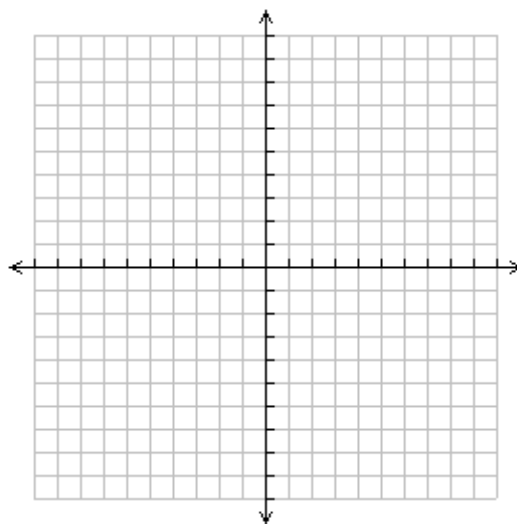AGS 1: Unit 6 Review   Name: _____

<u>Systems of Linear Equations</u>

Solve each system by graphing. Write your solution as an ordered pair (x, y).

1. $\begin{cases} 3x + y = 7 \\ -2x + y = -8 \end{cases}$

2. $\begin{cases} y = -x + 6 \\ y = x - 2 \end{cases}$

Solve each system using substitution. Write your solution as an ordered pair (x, y).

6. $\begin{cases} -2x - y = -35 \\ y = -x + 15 \end{cases}$

7. $\begin{cases} x + 2y = 20 \\ -4x - y = -73 \end{cases}$

Solve each system using elimination. Write your solution as an ordered pair (x, y).

8. $\begin{cases} 2x + y = 3 \\ 2x + 2y = 2 \end{cases}$

9. $\begin{cases} 3x + 5y = -1 \\ x + 2y = -1 \end{cases}$
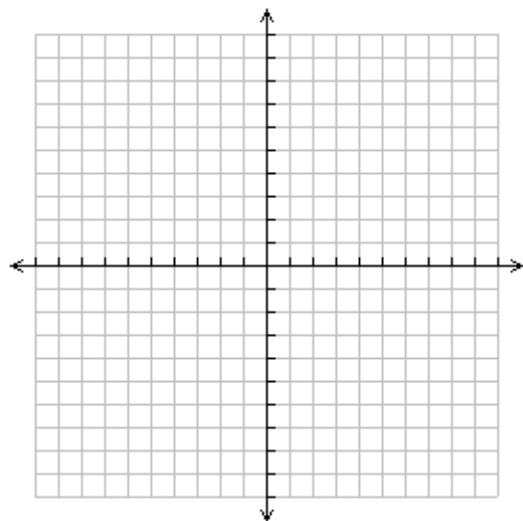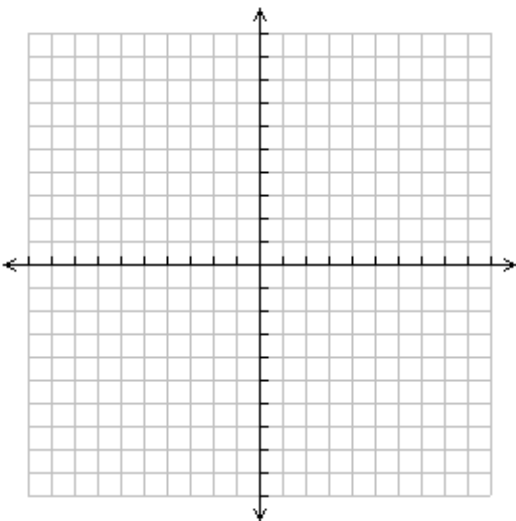
10. $\begin{cases} -3x - y = -15 \\ 8x + 4y = 48 \end{cases}$

Solving Systems of Inequalities

Solve each system by graphing.

14. $\begin{cases} y \leq 2x - 3 \\ 3x + 2y > 10 \end{cases}$

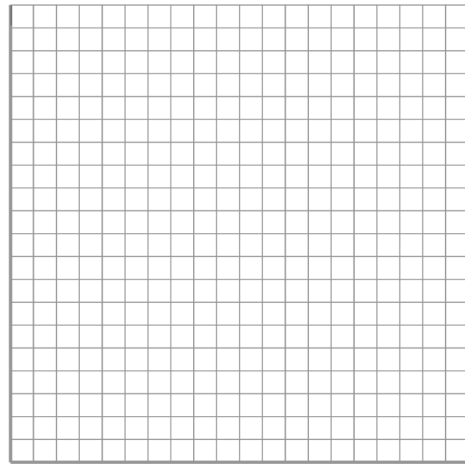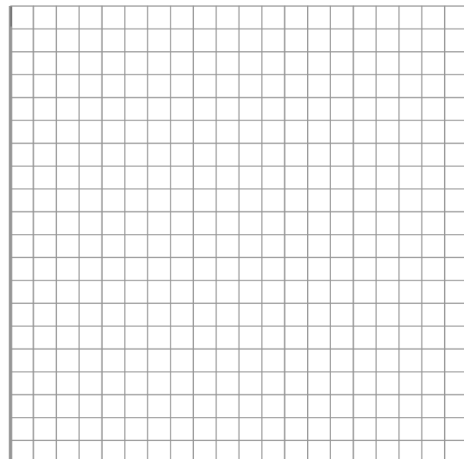15. $\begin{cases} x \leq -y \\ 2x - y < 4 \end{cases}$

Context Problems

For each context problem:
- a) Write a system of **equations**
- b) Solve the system by graphing
- c) Verify your solution by solving algebraically (substitution or elimination)
- d) Interpret your solution

12. You and your brother are both saving money to be able to go on a trip. You already have $400 in the bank and are planning to save another $250 per month. Your brother has $200 in the bank and plans to save $300 per month. You think you will have more money in 6 months when the trip is scheduled to happen. Are you correct? How do you know?
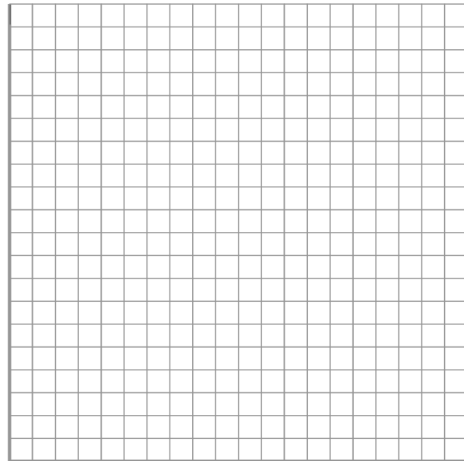
13. Tickets for school play cost $4 for adults and $2 for students. At the end of the play, the school sold a total of 105 tickets and collected $360. Find the number of adult and students ticket sold.

For each context problem:
      a)   Write a system of **inequalities**
      b)   Find the limits for each inequality
      c)   Graph the system.
      d)   Give 3 realistic solutions to the system

18.   You are planning a cookout. You think you will need at least 5 packages of hotdogs and hamburgers. A package of hotdogs costs $1.90, and a package of hamburger costs $5.20. You can spend a maximum of $20 on hotdogs and hamburgers.

19.   You receive a $75 gift card to the movie theater. A ticket on Tuesday costs $5 and tickets are $12 the rest of the week. You want to go see at least 6 movies.
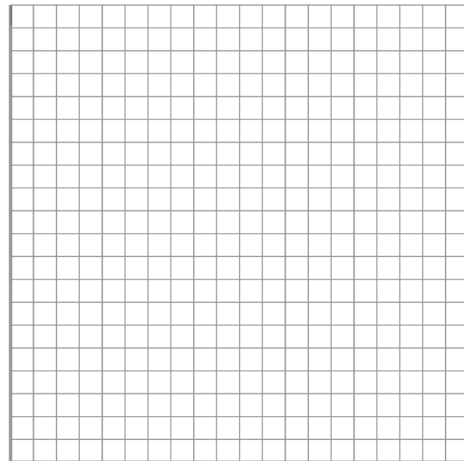
For each context problem:
- a) Write a system of **inequalities**
- b) Find the limits for each inequality
- c) Graph the system.
- d) Give 3 realistic solutions to the system

20. Beaver Achievers has a weekly budget of $75 for snacks. You have found that granola bars are $0.50 each and bottles of water are $0.75 each. You need to make sure you have at least 50 bottles of water.