

# Unit 1B TEST SYSTEMS

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Solve each system.

1. 
$$\begin{cases} x + y = N \\ y = Nx - N \end{cases}$$

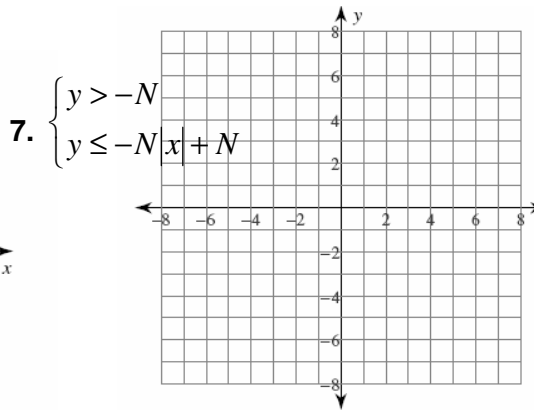
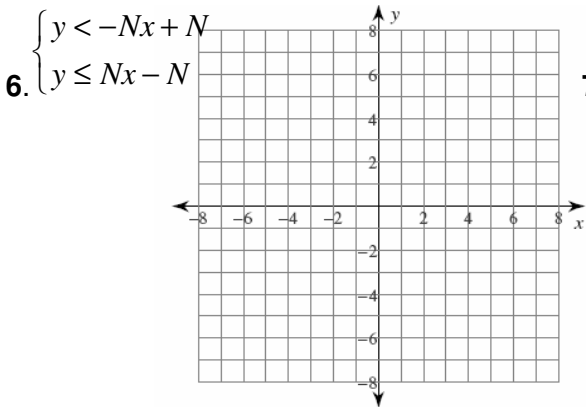
2. 
$$\begin{cases} x + y = N \\ y = Nx + N \end{cases}$$

3. 
$$\begin{cases} x + Ny = N \\ Nx + Ny = N \end{cases}$$

4. 
$$\begin{cases} Nx + y + z = N \\ Nx + Ny + Nz = N \\ Nx + Ny - Nz = N \end{cases}$$

5. 
$$\begin{cases} Nx + y + z = N \\ Nx + Ny + Nz = N \\ Nx + Ny = N \end{cases}$$

Solve the system by graphing



8. A grocery store has small bags of apples for \$N and large bags of apples for \$N. If you buy N bags and spend \$N, **how many of each size bag did you buy?**
9. Last year, Hopewell's baseball team paid \$N per bat and \$N per glove, spending a total of \$N. This year, the Prices went up to \$N per bat and \$N per glove. The team spent \$N to purchase the same amount of equipment as last year. **How many BATS did the team purchase each year?**
10. Suppose the movie theater you work at sells popcorn in three different sizes. A small cost \$N, a medium cost \$N, and a large costs \$N. On your shift, you sold N containers of popcorn and brought in \$N. You sold twice as many large containers as small ones. **How many of each popcorn size did you sell?**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. Put on GRAPH

7. Put on GRAPH

8. # of small bags \_\_\_\_\_

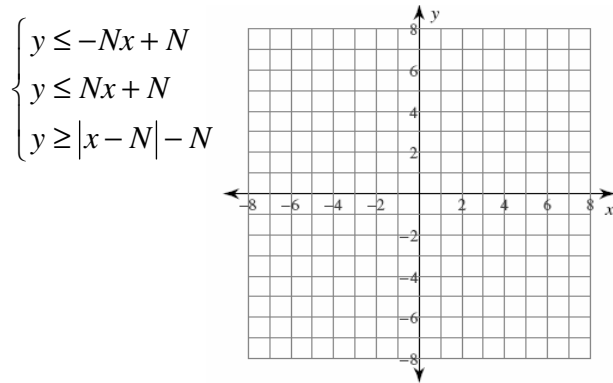
# of large bags \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

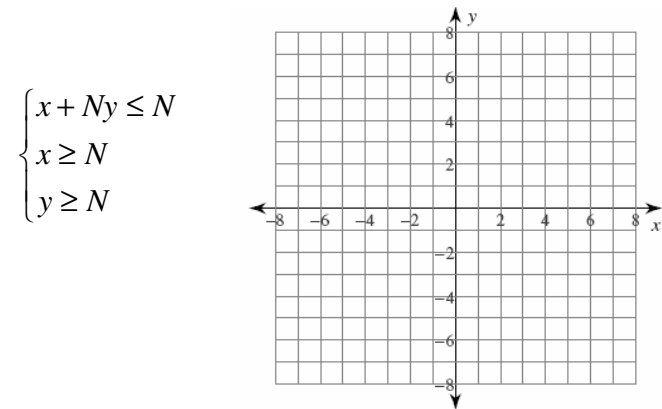
**SHOW ALL WORK**

**11. Find the value of X & Y that maximizes the function C = Nx + Ny**



List all Vertices:

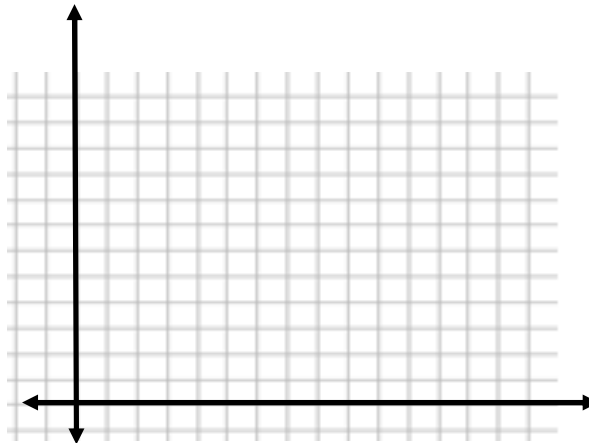
**12. Find the value of X & Y that maximizes the function C = Nx + Ny**



List all Vertices:

13. Baking a batch of cookies takes N cups of flour and N cups of sugar. Baking a batch of brownies takes N cups of flour and N cups of sugar. A baker has N cups of flour and N cups of sugar. He makes \$N dollar per batch of cookies and \$N profit for each batch of brownies. How many batches of each type should the baker make to maximize his profit?

Constraints:



List all vertices

11. Max at point : \_\_\_\_\_

12. Max at point : \_\_\_\_\_

13. The baker should make  
 \_\_\_\_\_ cookies  
 \_\_\_\_\_ brownies  
 To have a maximum  
 profit of \$ \_\_\_\_\_