

Name: \_\_\_\_\_  
Date: \_\_\_\_\_  
Class: \_\_\_\_\_

Algebra  
Unit 5  
HW 5-7

1) John has two part time jobs. He works for a landscaping company for \$10 per hour and also works at a bakery for \$15 per hour. He can work at most 52 hours a week and he needs to make at least \$600 per week to keep his current quality of life. Use a graph to solve a system of inequalities and list two different numbers of hours that he can work to achieve his goal.

2) The drama club at a local high school is trying to raise money by putting on a play. They have only 500 seats in the auditorium that they are using and are selling tickets in the following manner: \$5 for a child's ticket and \$10 for an adult's ticket. They must make at least \$2000 to cover their expenses. Use a system of inequalities to determine what is the minimum number of adult tickets they must sell to break even if they plan to sell 100 children's tickets?

3) Jody is working two jobs, one as a carpenter and one as a website designer. He can work at most 50 hours per week and makes \$35 per hour as a carpenter and \$75 an hour as a website designer. He wants to make at least \$2350 per week but also wants to work at least 10 hours per week as a carpenter. Let  $c$  represent the hours he works as a carpenter and let  $w$  represent the hours he works as a website designer.

What is the maximum amount of money he can make under these conditions?

4) Solve the following system:  $8x = 8 - 4y$  and  $28.5 + 10x = 6y$

5) Two friends are buying flowers for their girlfriends. The first friend buys 12 roses and 16 carnations and pays \$23.80. The second friend buys 7 roses and 21 carnations and pays \$20.30. If another person wanted to buy 10 of each flower how much should they expect to pay?

6) Is  $(10.2, -6.4)$  a solution to the system  $19 - 5y = 5x$  and  $15y - 20x = 108$ ?

7) Solve the following system of equations:  $10x = 26 + 8y$  and  $2y = \frac{5}{2}x - 6.5$