Algebra II- Mrs. Tilus Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit 3-Part II: Review

*Prepare well*. -ELK

1. A roller rink charges a certain fixed amount to rent their facilities, and a separate amount for each guest. A party for 52 people cost $410, and another party for 84 people cost $578. Find the fixed amount to rent the rink, and the amount charged for each guest. **Show your work and label your answer!**

Equation #1\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Equation #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The fixed amount to rent the rink is \_\_\_\_\_\_\_\_\_\_\_\_\_, and they charge \_\_\_\_\_\_\_\_\_\_\_\_\_ for each guest.

2. Traveling downstream, a boat can cover 16 kilometers in 2 hours. Going upstream, it can make only ¾ of this distance in 2 hours. What is the rate of the boat in still water and what is the rate of the current? **Show your work and label your answer!**

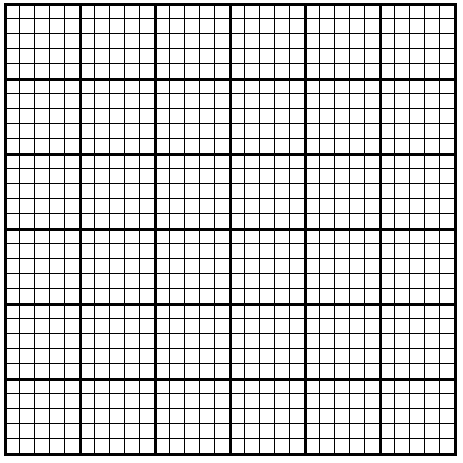
Equation #1\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Equation #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The rate of the boat in still water is \_\_\_\_\_\_\_\_\_\_\_\_\_, and the rate of the current is \_\_\_\_\_\_\_\_\_\_\_\_\_ .

******3. Graph the solution set to the system of inequalities. **Shade what is true.**

4. You own a small greenhouse and plan to raise carnations and daisies. Let **x=carnations**, and **y=daisies**. Write an inequality for each of the following restrictions. **Graph each inequality, and shade what is false.**



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a.) The most you can plant is 46 plants total.

b.) You must have at least 12 plants of each kind.

(Hint:You need two inequalities for this part.)

c.) The number of daisies must be greater than

or equal to 2/3 times the number of

carnations.

5. The following graph has been completed for a poultry farm. **The number of geese is on the x-axis, and the number of turkeys is on the y-axis.** The feasible region is **shaded**. A goose brings in a profit of $2.00 and a turkey brings in a profit of $3.00.



a.) Write the equation representing total profit

In terms of geese and turkeys.

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b.) Find the coordinates of the point for

the maximum profit.

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c.) What is the profit at this point?