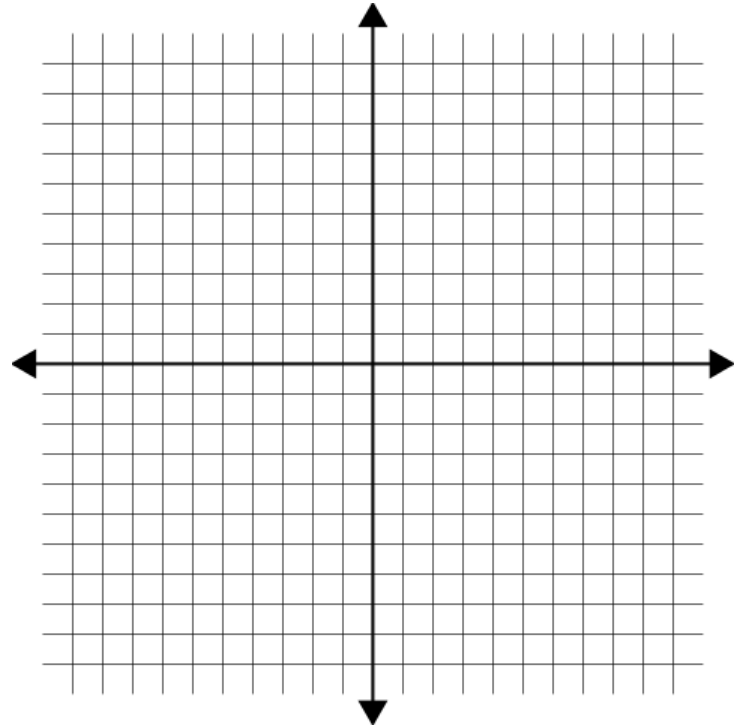


8A Review Day 7

Solve the system of equations by graphing.

$$10y + 15x = -60$$

$$y + 6 = -\frac{9}{4}(x + 2)$$



Solve each inequality for x . Write the answer in interval notation.

$$-3 + 2(5 - x) \geq 6x + 5 - 3x + 2$$

$$\frac{11x-3}{2} < \frac{-13x+7}{3}$$

Determine the first three terms of each sequence. Is the sequence arithmetic or geometric? Explain why.

$$h(n) = n^2 + 4$$

$$d(1) = -3, d(n) = -2 \cdot d(n-1)$$

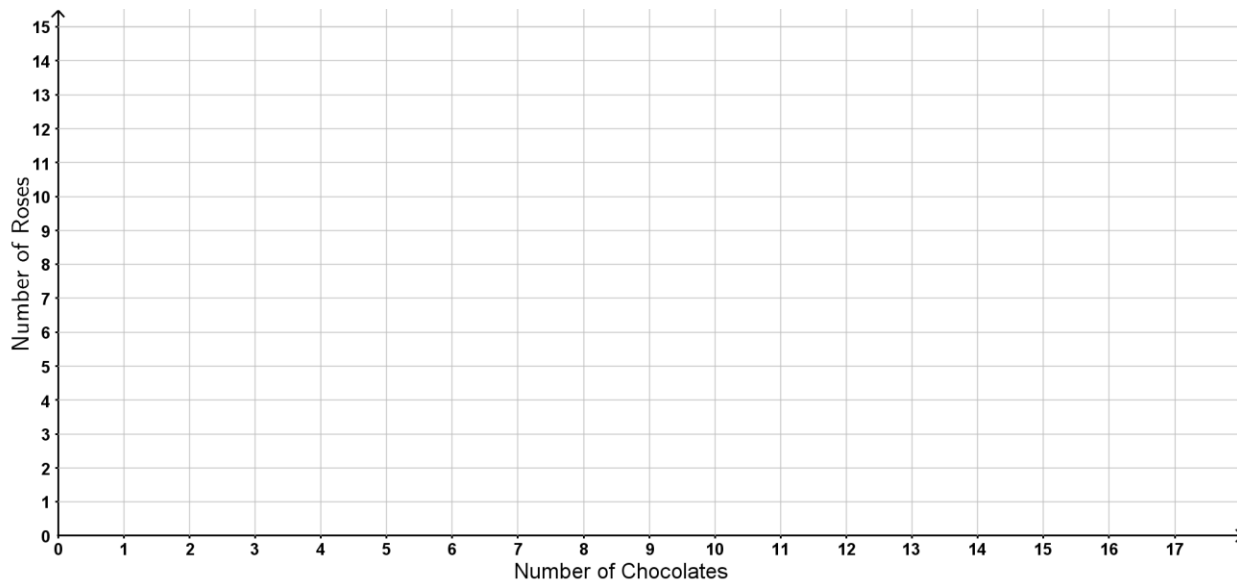
For Valentine's Day, Mr. Carlson decides to surprise Esther with some wonderful gifts. **Each chocolate brings Esther 4 happiness, and each rose brings her 3 happiness.**

Let's call x the number of chocolates MC gives Esther and y the number of roses MC gives Esther. Write an equation for Esther's happiness.

MC needs **24 minutes to make a chocolate** and **12 minutes to pick a rose**. MC **only has 180 minutes available** for making chocolates and picking roses. Write an inequality expressing this.

MC needs **12 square inches to store a chocolate** and **24 square inches to store a rose**. MC **only has 144 square inches of storage space available**. Write an inequality expressing this.

Graph the inequalities.



Determine the intersection point.

What is Esther's maximum enjoyment? How many chocolates and roses should MC give her?

Larry invests \$65.22 in an account that earns 0.95% annual interest. Write an equation for a function modeling this situation. Then, determine how much money Larry will have in 17 years.

Uncle Basil invests \$930.58 in an account that earns 0.27% annual interest. Write an equation for a function modeling this situation. Then, determine how much money Uncle Basil will have in 17 years.

Will Larry and Uncle Basil ever have the same amount of money? If so, why? If not, why not?

Tuna Elbow the Velociraptor eats 12 Twizzlers and 5 alligator-flavored muffins on Thursday for a total of 3,080 calories. He eats 3 Twizzlers and 15 alligator-flavored muffins on Friday for a total of 7,920 calories. How many calories does each delicious treat contain?

Define your variables. What should each one stand for?

x :

y :

Write a system of equations modeling this situation. Solve it to determine the number of calories in each food.

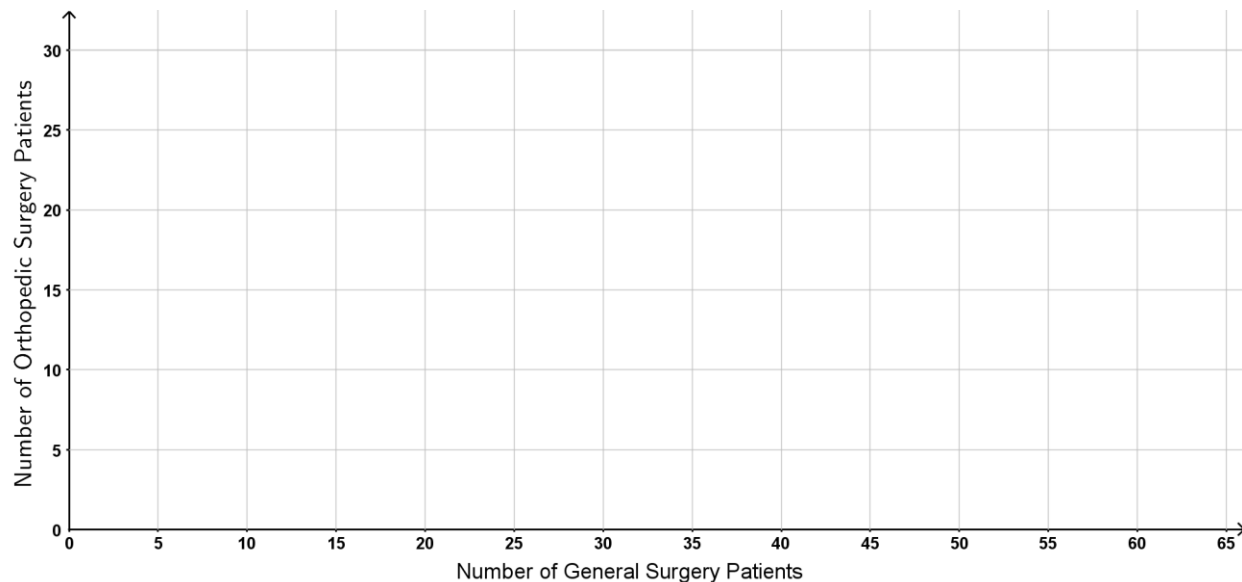
Mr. Carlson decides to spend his winter break performing surgery in Esther's garage. Each general surgery he performs earns him \$200 profit, and each orthopedic surgery he performs earns him \$300 profit.

Let's call x the number of general surgery patients and y the number of orthopedic surgery patients. Write the profit equation.

General surgery requires 2 hours per patient. Orthopedic surgery requires 4 hours per patient. MC only has 80 hours of surgery time available. Write an inequality expressing this.

General surgery requires 2 hours of therapy per patient. Orthopedic surgery requires 12 hours of therapy per patient. Esther, who will be performing the therapy, only has 120 hours of therapy time available. Write an inequality expressing this.

Graph the inequalities.



Find the intersection point of the two lines.

How many of each type of patient will earn Mr. Carlson the greatest profit?