Name: _____ Period: _____

Score: _____/_____ _____%

HW 6-6 HONORS: Solving Systems in Context

Provide the desired information about each situation given. You may use your graphing calculator to find the graph and table of the information.

Example 1: You are having some friends over for a party this weekend at your house. Your parents have said you have $60 that you can spend on food, and you've decided to use that money to buy pizzas and ice cream. Macy's has pizzas for $6.00 each and tubs of ice cream for $3.00 each. Smith's has pizzas for $4.00 each and tubs of ice cream for $4.00 each.

a) Define your variables:

b) Write your equations:

c) Graph: Label lines, intercepts and intersection point.

d) Table: Must go from y-intercept to x-intercepts and include WHOLE # VALUES.

Equation 1 Ordered Pairs	Equation 2 Ordered Pairs

e) What is the coordinate of intersection?

f) What does the intersection point mean in context of the story?

g) If you decide to spend all of your money on pizza, which store should you choose? Why? How does this decision show up on the graph?

h) If you decide that you need to buy 7 pizzas, which store will allow you to buy more ice cream on your budget? How does this decision show up on the graph?

Example 2: Addie and Ben are 15 years old and are in 9th grade right now. They decide to start saving up their money to take a dream vacation one day. Addie puts $500.00 into a savings account and decides to deposit $45.00 into this special savings account every year. Ben puts $450.00 into a savings account and plans to just get more money off of the interest he will earn. His account earns 7.5% interest compounded annually.

a) **Define your variables:**

b) **Write your equations:**

c) Graph: Label lines, intercepts and intersection point.

d) Table: Include x values from 0 – 15.

x	Eq. 1:	Eq. 2:

e) What is the coordinate of intersection?

f) What does the intersection point mean in context of the story?

g) If they decide to take this dream vacation in 3 years right after high school graduation, who will have more money towards the trip? How do we know?

h) If they decide to go on the trip together when they turn 30, who will have had the better savings plan? How do we know?

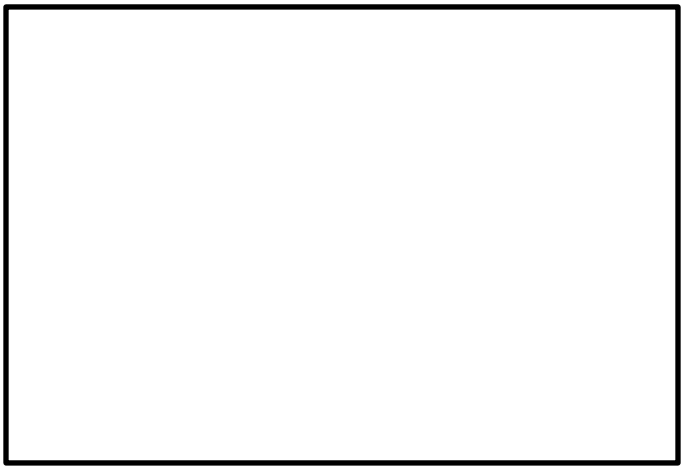
Example 3:

John invests $20,000 into an account that earns 3.2% interest compounded quarterly. Rebecca invests $24,000 into an account that earns 2.4% interest compounded monthly.

a) **Define your variables:**

b) **Write your equations:**

c) Graph: Label lines, intercepts and intersection point.



d) What is the coordinate of intersection?

e) What does the intersection point mean in context of the story?

f) Who has the better investment in the short term? Who has the better investment in the long term?

Homework Problems:

4. Your extended family is having a reunion, and your family is in charge of getting the food for the dinner. You have $900.00 to spend on lasagnas and sides (salads, bread sticks, desserts, etc.). Store A offers you lasagnas for $12.00 each and $9.00 for each side dish. Store B offers you lasagnas for $18.00 each and $6.00 for each side dish.

The equations are provided. Use a graphing calculator to graph the equations and then answer the questions that follow.

Equations:

Store A: $12x + 9y = 900$

Store B: $18x + 6y = 900$

Graph: Label lines, intercepts and intersection.

a) What is coordinate of intersection? _____

b) What does the intersection point mean in context of the story?

_____

_____

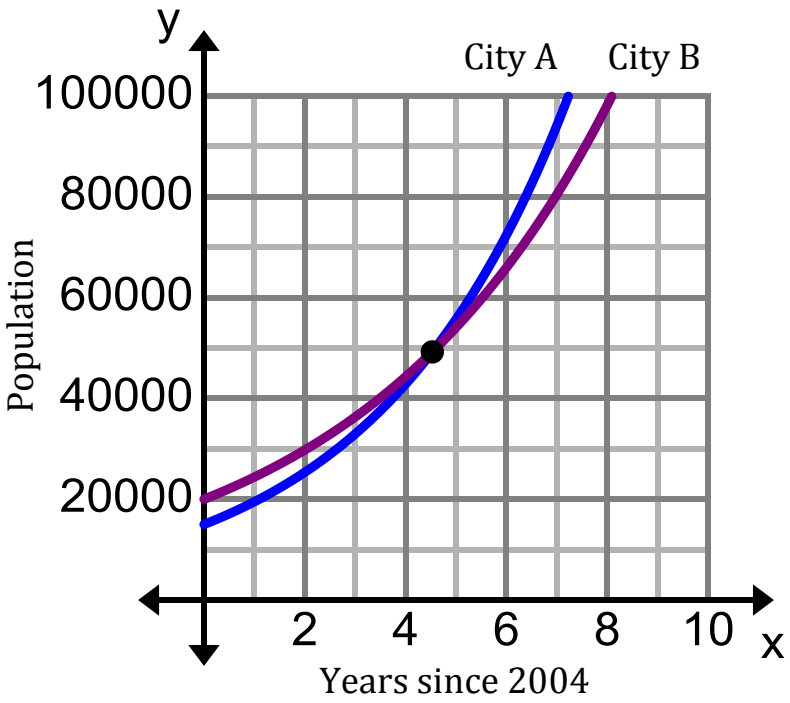
c) If you decide your family needs to buy 40 lasagnas, which store should you go with so you can get the most number of side dishes within your budget?

_____

d) If you decide your family needs to by 80 different side dishes, which store should you go with so you can get the most number of lasagnas within your budget?

_____

5. The equations and graphs below represent the population growth of two different cities. Use the information to answer the questions that follow.



a) What is approximate coordinate of intersection? _____

b) What does the intersection point mean in context of the story?

_____

_____

c) Which city has the higher population in 2006? _____

d) Assuming the growth continues at the same rate, which city will have the higher population in 2016?

_____