

Name: _____ Period: _____

Score: _____ / _____ %

HW 6-6 HONORS: Solving Systems in Context

1. 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.

$x = \text{Lasagnas}$ $y = \text{side Dish}$

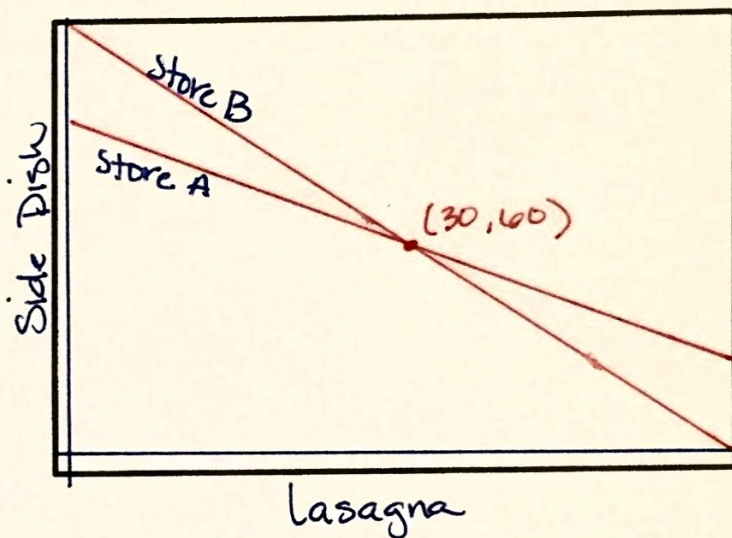
Equations:

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

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

Graph: Label axes, lines, intercepts and intersection point.

Store A: Ordered Pairs	Store B: Ordered Pairs
(0, 100)	(0, 150)
(15, 80)	(15, 105)
(30, 60)	(30, 60)
(45, 40)	(45, 15)
(60, 20)	(50, 0)
(75, 0)	



a) What is coordinate of intersection? (30, 60)

b) What does the intersection point mean in context of the story?
 If you purchase 30 lasagnas and 60 side dishes you will spend \$900 at both store A & B.

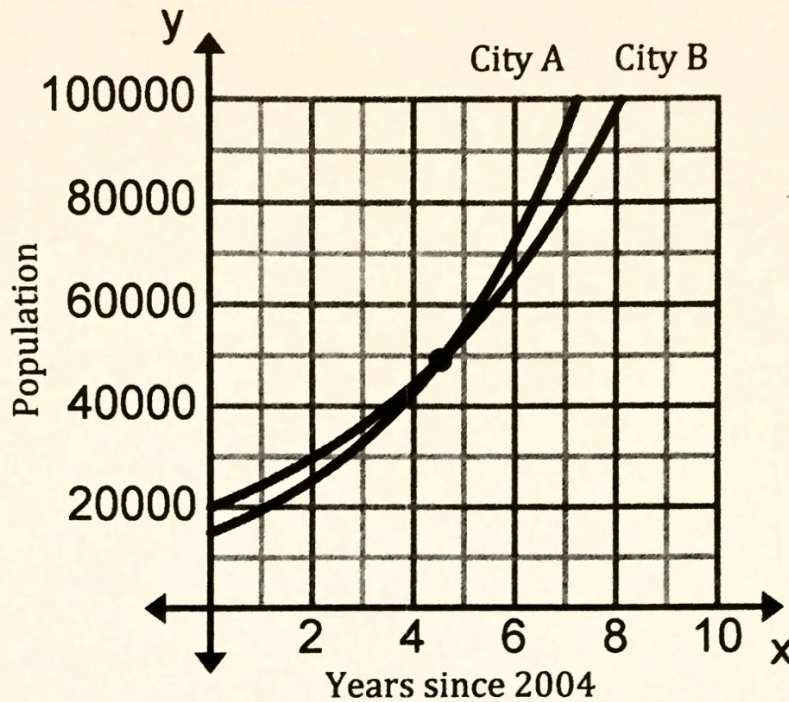
c) If you decide your family needs to buy 40 lasagnas, which store should you go with so you can get the most number of side dishes within your budget?

Store A

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?

Store B

2. 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? (4.5, 50,000)
- b) What does the intersection point mean in context of the story?
After 4 1/2 years both city A & B will
have the same population of 50,000
- c) Which city has the higher population in 2006? city B
- d) Assuming the growth continues at the same rate, which city will have the higher population in 2016?
city A