Math 1   Name:_____
System of Equations word problems

1. There are two businesses that offer internet
   access. Surf City charges $3.95 per day plus
   $0.05 per minute. Byte to Eat Café charges
   $2 per day plus $0.10 per minute.

a) Write an expression for **each** company to
represent the daily charge for any number of
minutes.

Surf City_____

Byte to Eat Café _____

b) Complete the tables below for each
       company and graph the information on **one**
       set of axes.
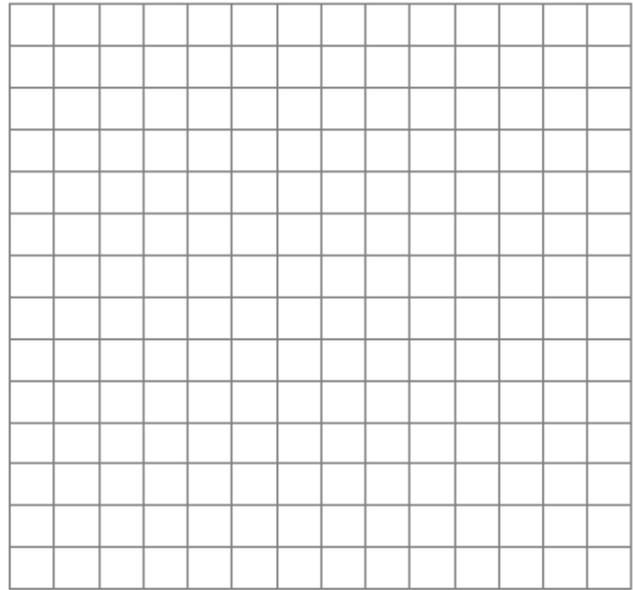
Surf city

# minutes (x)	0	1	2	3	…	7	…	10	11
Daily Charge (y)									

Byte to Eat Café

# minutes (x)	0	1	2	3	…	7	…	10	11
Daily charge (y)									

c)   After how many minutes will their daily charge be the same? (Find the point of intersection)

d)   Explain what the point of intersection from *part c* means in this context.

e) Who will be more economical to use? Justify your answer.

2. Charter-boat fishing for walleyes is popular on Lake Erie. The charges for an eight-hour charter trip for 2 companies are the following: Wally's charges $29 per person with a boat rental of $200. Pike's charges $60 per person with a $50 boat rental
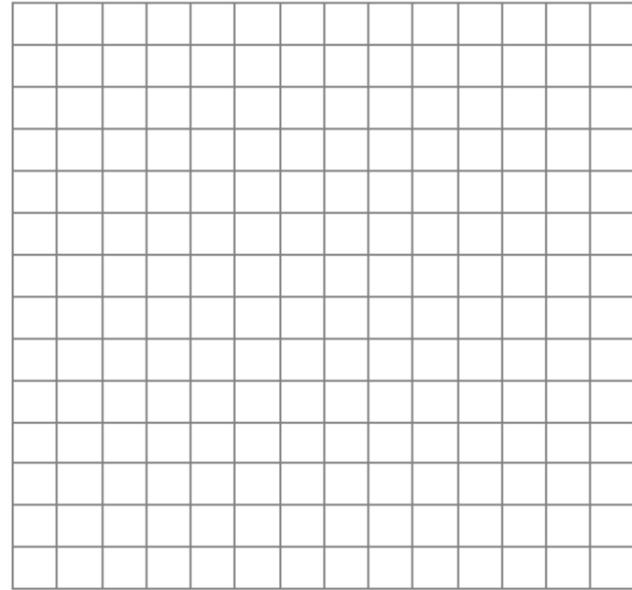
a) Write an expression for **each** company to represent what they will be charging:

Wally's_____

Pike's_____

b) Complete the tables below for each company and graph the information on **one** set of axes.

Wally's

# people (x)	0	1	2	3	…	8	…	10	11
cost (y)									

Pike's

# people (x)	0	1	2	3	…	8	…	10	11
cost (y)									

c) After how many weeks will their costs be the same? (Find the point of intersection)

d) Explain what the point of intersection from *part c* means in this context.

e) Determine which service is more economical for a party of 4 and for a party of 8. Justify your answer.

f) Assuming you want to minimize your costs, under what circumstances would you choose Wally's charter service? Explain.

3. Wendy is starting a catering business and is attempting to figure out who she should be using to transport the food to different locations. She has found two trucking companies that are willing to make sure her food arrives intact. Peter's Pick Up charges $0.40 per mile and charges a flat fee of $68. Helen's Haulers charges $0.65 per mile and charges a flat fee of $23.

a. Define Variables: x = _____

  y = _____

b. System of equations to model the situation:

_____

_____

c. Graph

d. For what distance would the cost of transporting to the produce be the same for both companies? What is that equal cost?

e. Which company charges a lower fee for 160 mile trip? Explain.

Solve the system:

5. Ms. Smith decided to purchase M&M and Hershey Bars for her students. Each M&M bag costs $3.00 and each Hershey Bar costs $2.00. She ended up spending $16.00 and on her purchase of 6 items.

a. Define Variables: x = _____   y = _____

b. Make a table of the information given:

c. From table write system of equations

_____

_____

d. Graph

e. How many bags did she purchase of each type of candy?

Old McDonald had a farm that had chickens and ducks. Everyday Mr. McDonald collects 19 eggs, and he knows that each duck lays 2 eggs, while each chicken lays 3 eggs. But each week, every duck eats 3 pounds of feed, while every chicken eats 4 pounds of feed, for a total of 26 pounds of feed.

a. Define Variables: x = _____ y = _____

b. Make a table of the information given:

c. From table write system of equations

_____

_____

d. Graph

e. How many chickens and ducks are on the farm?

Last weekend, the Knights of the Round Table held a Jousting contest. During the contest, each knight had 3 spears, and each squire had 2 spears, for a total of 32 spears. Also, each knight had 2 swords, and each squire had only 1 sword, for a total of 19 swords.

a. Define Variables: x = _____

y = _____

b. Make a table of the information given:

c. From table write system of equations

_____ _____

d. Graph

e. How many Knights and Squires were present?