SOLVE AND INTERPRET LINEAR SYSTEMS...BY GRAPHING

1. **Movies To Go** has no membership fee and rents videos for $3 each. **Universal Videos** has a yearly membership fee of $15 and charges $2 per video.

a) Write an equation to represent the cost of renting videos at each video store. Define your variables.

b) Create a table of values for each equation. (Hint: use values like 0, 5, 10, 15)
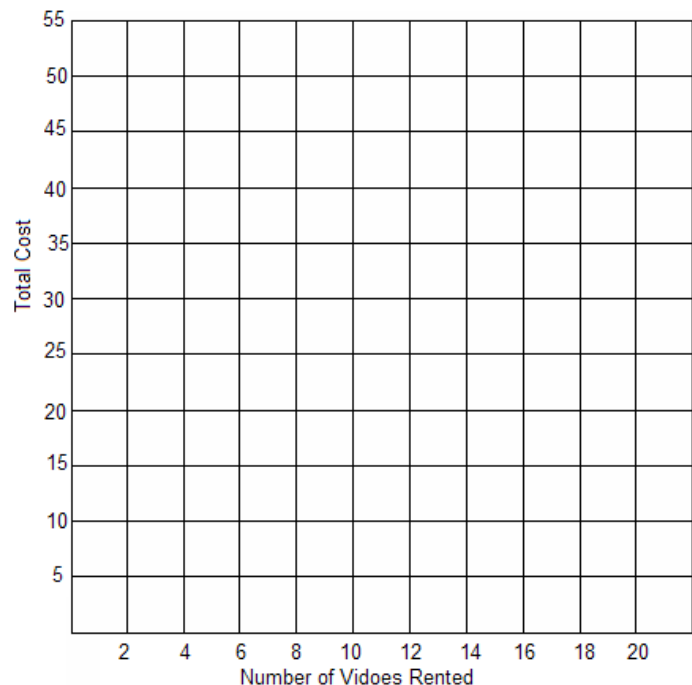
Movies to Go

# of Videos	Cost ($)
0	
5	
10	
15	

Universal Videos

# of Videos	Cost ($)
0	
5	
10	
15	

c) Graph both equations and determine the point of intersection.

P.O.I. is (_____ , _____)

Check the solution in **BOTH** equations (LS = RS).

d) What does the point of intersection represent in this situation?

e) Which video store would you choose to rent from? Why? What other factors would affect your decision?

2. Katrina is looking at banquet halls for her parents' anniversary party. Moonlight Hall charges a fixed cost of $1000 plus $75 per guest. Riverside Hall charges $1500 plus $50 per guest. Let C represent the total cost, and n represent the number of guests. (or use y and x)

    a. Write an equation to represent the total cost for each Hall.

    b. Create a table of values for each equation. (Hint: use values like 0, 5, 10, 15, 20)
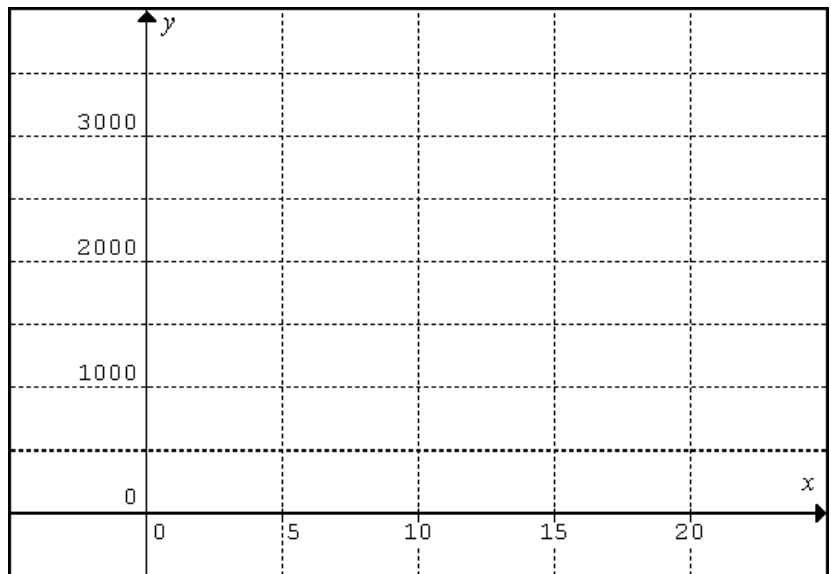
<u>**Moonlight Hall**</u>

# of Guests	Cost ($)
0	
5	
10	
15	
20	

<u>**Riverside Hall**</u>

# of Guests	Cost ($)
0	
5	
10	
15	
20	

    c. Graph the lines that the equations represent.

    d. Find the point of intersection of the lines.   P.O.I. is (_____ , _____)

    e. Find the number of guests for which the total cost is the same at both halls.

3. During the winter months, Don uses his pickup truck to clear snow from driveways. Don charges $15 per driveway. Morgan's Snow Removal charges $150 for the season.

    a. Write an equation to represent each of the snow clearing services.

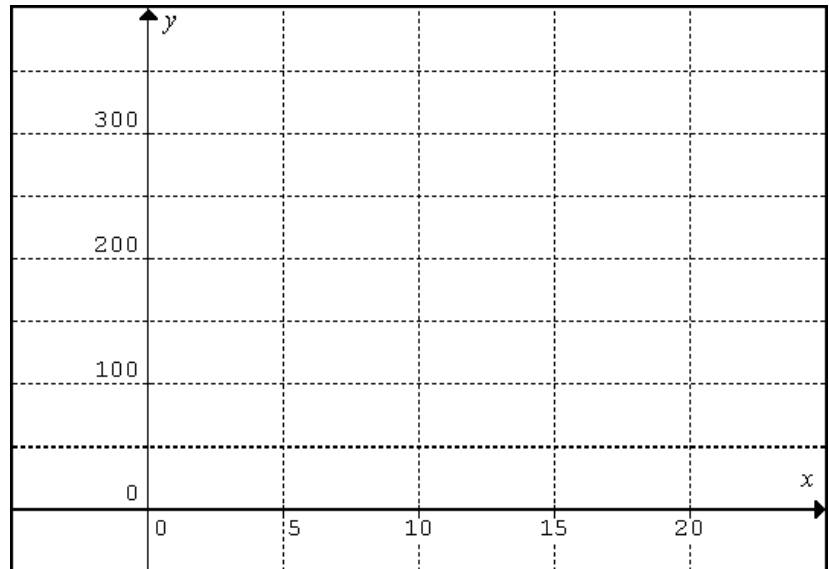   **b.** Create a table of values for each equation. (Hint: use values like 0, 5, 10, 15, 20)

Don's Snow Removal

# of Guests	Cost ($)
0	
5	
10	
15	
20	

Morgan's Snow Removal

# of Driveways	Cost ($)
0	
5	
10	
15	
20	

    c. Graph the lines that these equations represent.

    d. Find the point of intersection of the lines.   P.O.I. is (_____ , _____)

    e. Explain how you would decide who to hire to clear your driveway this winter.