

Relax. You have done problems like these before. Even if these problems look a bit different, just do what you can. If you're not sure of something, please ask! You may use your calculator. Please show all of your work and write down as many steps as you can. Don't spend too much time on any one problem. Please leave the following grading key blank for me to use. Do well. And remember, ask me if you're not sure about something.

Problems	1	2	3	Total		Grade
Points					%	
Out of	10	28	12	50		

1. The following table shows Emily's annual salary when she was hired for her job, 2 years later, and 10 years after she was hired.

Years at company	0	2	10
Emily's salary	\$28000	\$30870	\$45609

- (a) How much is the rate of Emily's salary increase during the first two years of her employment?
- (b) How much is the rate of Emily's salary increase during the next time period?
- (c) Is this dependence linear? Explain why or why not in a sentence.

2. The local ski resort is trying to set the price for season passes. They will sell 12,000 passes if the season ticket price is \$380. If the price is \$400, they will sell only 10,000 passes. You can assume this decrease in demand for passes is linear.

(a) Name the variables, including units.

(b) Display the information from the story in a table.

(c) What is the rate of decrease in passes sold? In other words, how many fewer people will purchase season passes for every dollar increase in the price?

If you are not sure, you are welcome to find the equation in part (d) first.

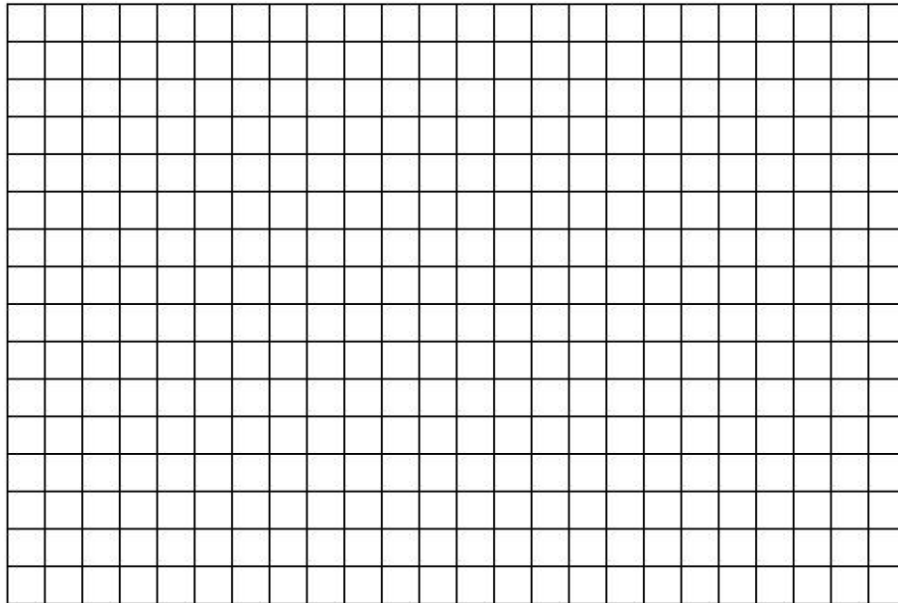
(d) Write an equation relating the variables.

(e) How many season passes will they sell if the price is \$355?

3. The following table shows the number of calories burned when I ran on the treadmill last week:

Time (minutes)	Calories burned
10	95
20	250
30	290
40	425
50	470
60	600

- (a) Make a scatterplot showing the data. *Scale your axes to start the time at 0 minutes and start the calories burned at 50 calories.*



- (b) Draw the line through the first two points listed (10 and 20 minutes). Explain why that line does not fit the data well. *Label this line B.*

- (c) Draw a line that you think fits the data better. *Label this line C.*