

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	4	Total		Grade
Points						%	
Out of	16	16	6	12	50		

1. My car cost me \$17,000 when I purchased it. The car's depreciation rate has been about \$2500 per year.

(a) Identify and name the variables in the story and state their units.

(b) Which variable is independent and which is dependent?

(c) Make a table showing my car's value after 1 years, 2 years, and 5 years.

(d) Is the function increasing or decreasing?

2. The table shows the cost for printing invitations for my wedding last summer.

I	10	50	125	200
C	30	100	150	200

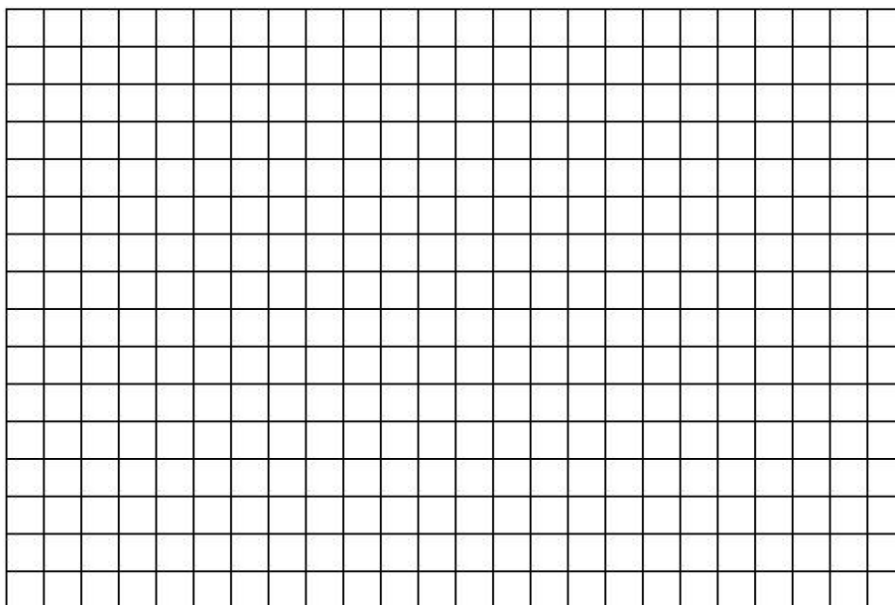
In the table, I = number of invitations ordered and C = total printing cost (\$).

- (a) What is the cost for ordering 50 invitations?

Don't forget the units.

- (b) Approximately what is the cost for ordering 150 invitations?

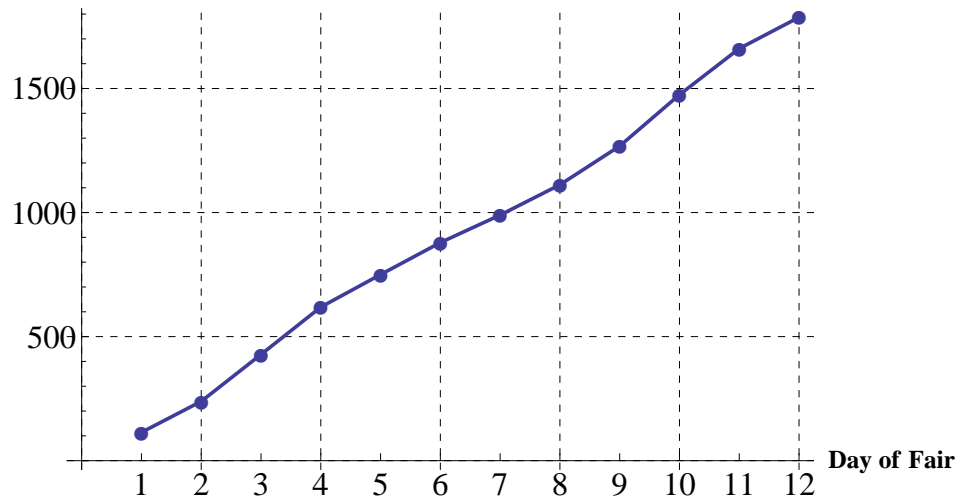
- (c) Draw a graph illustrating this information. *Be sure your axes are labeled and evenly scaled. Plot the points given and sketch in a smooth line or curve connecting them.*



- (d) Does your answer to part b agree with your graph? (Yes or no) If no, what would a better answer be?

3. The 2009 Minnesota State Fair broke many attendance records. The graph below shows the total attendance after each day of the fair.

2009 Cumulative Attendance (thousands of people)



- (a) Approximately how many people attended the state fair after four days?
- (b) When did the attendance exceed 1.5 million (= 1500 thousand) people?
- (c) The last day of the fair was Labor Day (September 7). If the fair had continued another day, what do you think the total attendance would be? Please write a sentence explaining your answer.

4. The speed record for the Kentucky Derby has gone unbroken since 1973. In that year, the horse Secretariat ran the Derby with a time of 1 minute and 59.40 seconds.

(a) Convert this time into decimal minutes.

(b) The Kentucky Derby track is exactly 10 furlongs. The furlong is an old measurement from medieval times. Hence Secretariat's speed was 5.025 furlongs per minute, as you can check. How fast is that in miles per hour? *Use 1 furlong = 660 feet and 1 mile = 5,280 feet.*