
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 \$15,000 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.

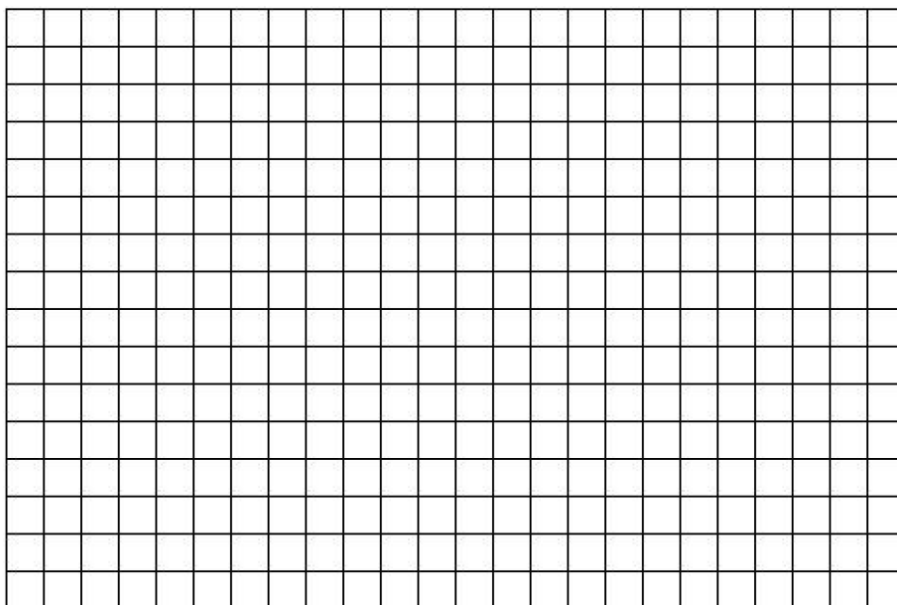
(d) Is the function increasing or decreasing?

2. The table shows the cost for hiring a jazz band for my wedding reception last summer.

M	30	60	120	180
C	200	250	475	900

In the table, M = number of minutes played and C = total cost of band (\$).

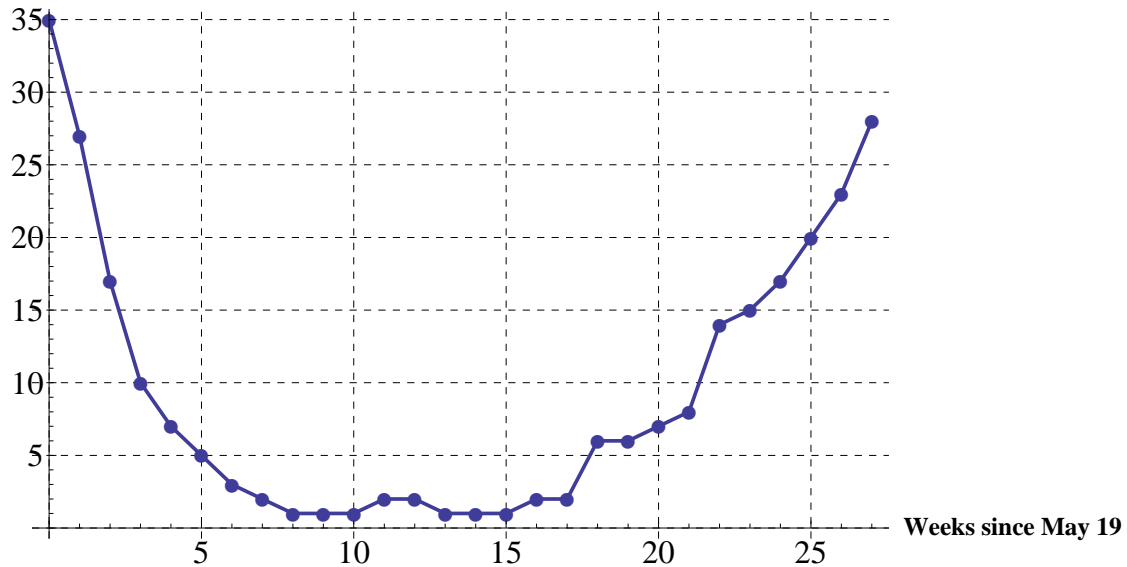
- (a) What is the cost for hiring a band to play for 120 minutes?
Don't forget the units.
- (b) Approximately what is the cost for hiring the band to play for 150 minutes?
- (c) Draw a graph illustrating this information. *Be sure your axes are labeled and evenly scaled. Plot the points given and sketch 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. According to ARC, the top song of 2007 was “Big Girls Don’t Cry (Personal)” by Fergie. The graph below shows the song’s chart position from when it entered the ARC weekly top 40 on May 19, 2007.

Chart Position



(a) After five weeks on the chart, what was the approximate ranking of the song?

(b) For approximately how long was the song ranked in the top ten?

4. At Beijing 2008, Kara Goucher (a Duluth, MN native) placed 9th in the women's 5000 meter race at a time of 15.82 minutes.

(a) Convert 15.82 minutes into minutes and seconds.

(b) Her speed was approximately 316 meters/minute, as you can check. How fast is that in miles per hour? *Use $1 \text{ meter} = 3.28 \text{ feet}$ and $1 \text{ mile} = 5,280 \text{ feet}$.*