

Step Function Word Problems

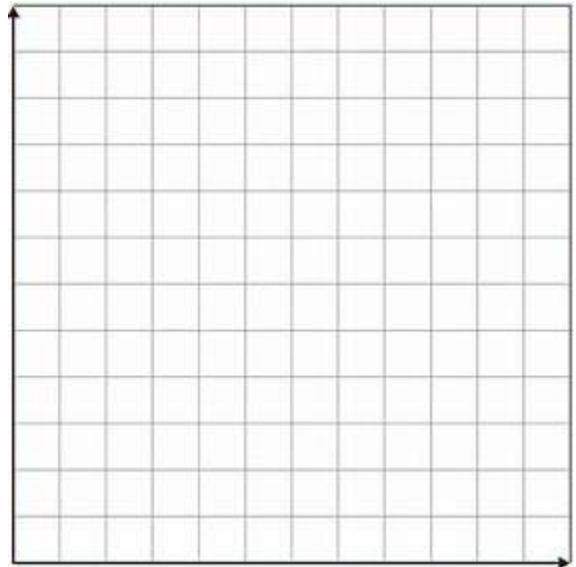
1. A local mechanic is having a sale and posts this flyer in the window.

BIG SALE THIS WEEKEND ONLY!!!	
<u>Price</u>	<u>Amount of Labor</u>
\$50.00	Up to 2 hours of work
\$100.00	After 2 hours of work up to 5 hours
\$200.00	After 5 hours of work up to 8 hours

a. What is the step function that can be created from this information?

$$f(x) = \left\{ \begin{array}{l} \\ \\ \\ \end{array} \right.$$

b. Graph the step function created in part A



c. Extension question

Assume that the repairs will take the maximum number of hours in each interval. Which interval represents the cheapest cost per hour worked?

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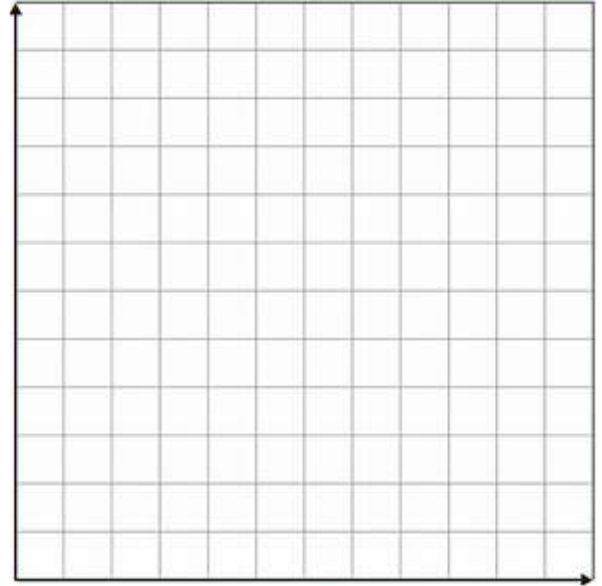
2. You are starting a tutoring business to make money to buy a car. You decide to structure your service pricing in the following way.

Hours of Tutoring	Prices
Up to 1 hour	\$30.00
From 1 hour up to 2 hours	\$55.00
From 2 hours up to 3 hours	\$90.00

a. What is the step function that can be created from this information?

$$f(x) = \left\{ \right.$$

b. Graph the step function created in part A



c. Extension question

If a person wanted a discounted hourly rate (assuming he/she was studying until the maximum in each interval), which interval should that person choose and why?

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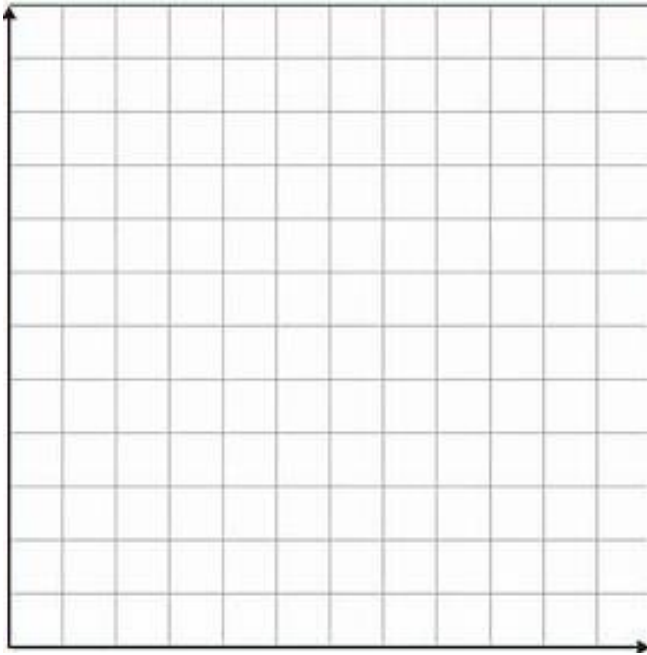
3. Super Fun Zone Entertainment Center has party rooms to rent for birthdays. Room rentals are priced according to the amount of time it is being used. Rooms are priced at \$150.00 for a rental up to 1.5 hours. From 1.5 hours until 3 hours, the rooms cost \$325.00. From 3 hours until 6 hours, the rooms cost \$625.00.

a. Create a table to represent the data from the word problem


b. Create a step function from the table

$$f(x) = \left\{ \begin{array}{l} \\ \\ \end{array} \right.$$

c. Graph the step function created in part B



d. Extension Question

If you wanted to rent a room for 4.5 hours, how much would you have to spend?

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