Piecewise Functions: Problem solving

In many areas, utility companies compete with others in order to gain business. For example, you may see numerous commercials for gas companies like Georgia Natural Gas or Scana. So how can you determine which company is best for you? Well it will depend on how much you use, and each company tries to find ways to attract more clients than their competitors. Below is an advertisement for a fake electricity company "Lights and Power"



- 1. According to the advertisement, how much does the first 1,000 kilowatt-hours (kWh) of electricity cost a customer?
- Last month you used 1,200 kilowatt-hours of electricity.
 a. How much did you pay for the first 1,000 kilowatt-hours?
 - b. How much did you pay for the next 200 kilowatt-hours?
 - c. How much did you pay total for the month?
- 3. Using the information from the advertisement determine the monthly cost for each of the following kilowatt-hours

Amount of kWh	Cost (\$)		ount Cost (\$) Wh	Amount of kWh	Cost (\$)
700		1,	100	1,500	
800		1,2	200	1,600	
900		1,:	300	1,700	
1,000		1,4	400	1,800	

4. Are you being rewarded or punished for using more electricity? Why do you say so?

Let's compare to a competitor named Community Electric. Below is their pricing plan

Monthly Fee of \$20	
 \$0.15 per kWh for usage up to 1,000 	
 \$0.05 per kWh for usage over 1,000 	

5. Using the information from the advertisement determine the monthly cost for Community electric for each of the following kilowatt-hours

Amount of kWh	Cost (\$)		Amount of kWh	Cost (\$)	Amount of kWh	Cost (\$)
700			1,100		1,500	
800		-	1,200		1,600	
900			1,300		1,700	
1,000			1,400		1,800	

- 6. Are you being rewarded or punished for using more electricity with Community Electric? Why do you say so?
- 7. You live in a small one-bedroom apartment and generally don't use more than 1,000 kWh hours of electricity. Which company should you go with?
- 8. At what usage of kWh would you change companies? Why?
- 9. You tend to use different amounts of electricity in the summer (when you use the AC a lot) to the winter (when you use heat which is powered by natural gas). You typically sign a 1-year contract with your electric company. Based on the different usage of each month, which company would be better for you based on your electricity consumption?

kWh usage per month	480	510	680	850	1210	1840	2000	1750	1180	960	554	500	TOTAL
Lights & Power COST (\$)													
Community													
Electric COST(\$)													