TI-nspire™

Electric Bill:
"Turn Off The Extra Lights?"
ID:

Name _____
Class _____

Scenario:

Electric bills represent a utility which everyone has to pay in the United States. Homeowners and most renters are responsible for paying their own electricity. Some apartment rents include the cost of electricity in the rent charge. It is important that we understand the cost of utilities and consider how utilization of electricity affects our total bill each month. Information from an electric bill is as follows:

Meter #	Start Date	Start Read	Read Code	End Date	End Read	Read Code
186194	05/08/07	37,139	Estimated	06/12/07	37,990	Regular

1. Determine the number of kilowatt hours (kwh) used:
   _____
   _____

Other Information regarding how charges are determined on the bill:

Rates:	Charges
50 kwh or less (monthly minimum)	2. $5.00
Next 300 kwh @ $0.04773	3.
Kwh over 350 @ $0.07218	4.
Total Energy Charge for _____kwh	5.
AREA adjustment _____kwh@$0.0001	6.
Resource Adjustment 29.82% of total amt.	7.
Minnesota Sales Tax (6.5%)	8.
Total Charge this service agreement	9.

Calculate #2 – 6 in the above table; these facts will be used as you construct a piecewise function to represent the energy charges. When you have created the function you will use the function and the other rates to determine the Total Charge for the service agreement using the *Calculator* application on the TI-Nspire calculator.

Create The Piecewise Function:
(Representing the Total Energy Charge)

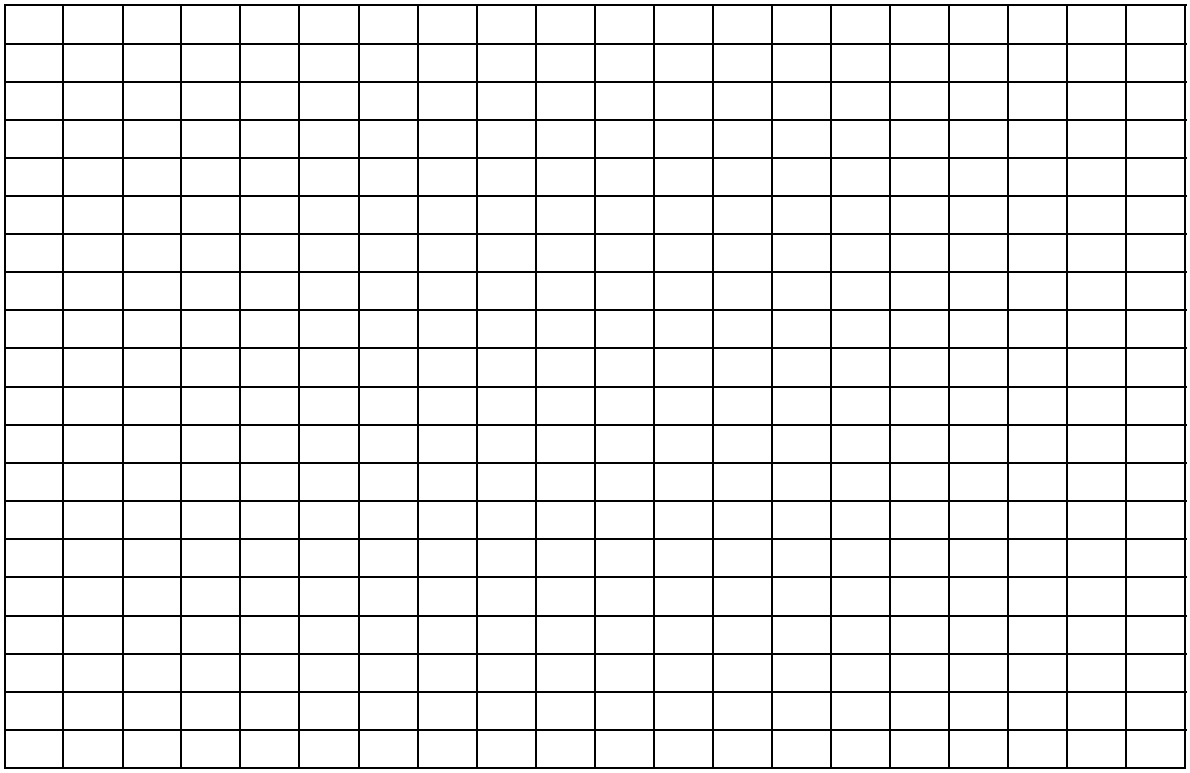
10. The "piece" representing 50 kwh or less_____

Add the AREA adjustment to each of the rates in the next two pieces.

11. The "piece " representing the next 300 kwh_____

12. The "piece" representing Kwh over 350_____ _

Graph the function represented : (Label Axis Appropriately)



13. Determine the **Total Charge For This Service Agreement for the Sample Problem, using the kwh determined in #1.** (Include 29.82% resource adjustment and Minnesota Sales Tax, 6.5%)

Complete the table below to determine total energy charge for the kwh indicated:

Kilowatt Hours Used	Total Energy Charge
14. 45 kwh	14.
15. 135 kwh	15.
16. 288 kwh	16.
17. 396 kwh	17.
18. 725 kwh	18.
19. 945 kwh	19.

Determine the **Total Charge For This Service Agreement For Each of KWH Listed:** (Include Resource Adjustment and Minnesota Sales Tax)

20. 45 kwh

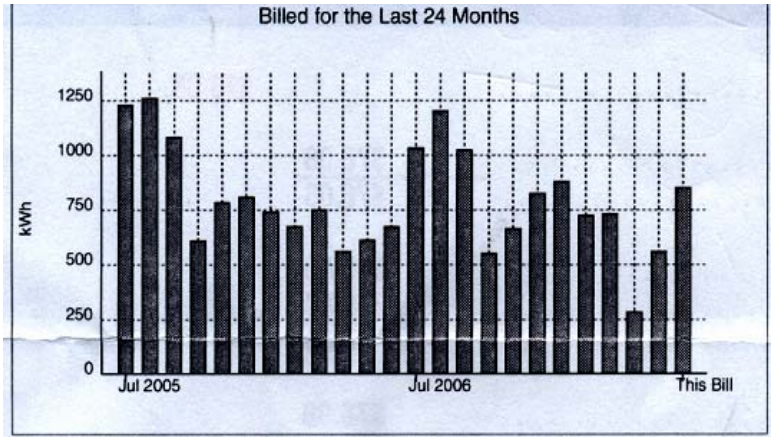
21. 135 kwh

22. 396 kwh

23. 945 kwh

List at *least* four reasons why a house with the same square footage and electricity plan as another house may have a considerable higher bill:

Study the following chart representing billing for the same house for the past 24 months.



24. What part of the United States do you think this house is located in? Explain your answer.