

Investigating An Electric Bill Student tns. Screens

1.1 1.2 1.3 1.4 ▶ DEG AUTO REAL

Refer to the electric bill provided. Note the start and readings. Perform a horizontal split screen split. Use a calculator on the bottom to verify the number of kilowatt hours used.

0/99

1.1 1.2 1.3 1.4 ▶ DEG AUTO REAL

Note the following rates for kilowatts used in a billing period:

- 5.00 for first 50 kwh or less
- .04773 per kwh for next 300 kwh
- .07218 per kwh for over 350 kwh
- .0001 per kwh AREA adjustment
- Resource adjustment is 29.82 % total
- Add 6.5% of total amount to ≈ bill charge

1.1 1.2 1.3 1.4 ▶ DEG AUTO REAL

Create a function for each of the three rates given for kilowatts amounts. Insert a graph and geometry page for each "piece".

Add a table, set the independent variable on ask. Try several different kwh, some less than 50 and some greater than 50. The first piece is shown on the next page.

1.2 1.3 1.4 1.5 ▶ DEG AUTO REAL

x	f2(x):..	piecwi
12	5.	
48	5.	
70	#UNDE	

$f2(x) = \begin{cases} 5, & 0 \leq x \leq 50 \\ \end{cases}$

2

100

$f(x) =$ 5.

1.3 1.4 1.5 1.6 ▶ DEG AUTO REAL

Use a calculator page to create a function that relates the monthly charge to the number of kwh used. Define the function as $C(x)$.

Recall: Nspire has a piecewise function template.

1.4 1.5 1.6 1.7 ▶ DEG AUTO REAL

Insert a graph and geometry page, trace and investigate the charge for different total kwh usages. Note that these charges do not represent the total bill, as resource adjustment and Minnesota sales tax are not represented by the function, $c(x)$.

1.5 1.6 1.7 1.8 ▶ DEG AUTO REAL

Use a calculator page and function notation to determine the cost of 125, 235, 350, 490, 850, and 1100 kwh.

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1.6 1.7 1.8 1.9 ▶ DEG AUTO REAL

Determine the total charge of 851 kwh, including resource adjustment (29.82%) and sales tax (6.5%) on the sum.

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1.7 1.8 1.9 1.10 ▶ DEG AUTO REAL

Question

What was the total charge for this service during the billing period?

Answer ⌵

1.8 1.9 1.10 1.11 ▶ DEG AUTO REAL

Complete a horizontal split on this page and use a calculator application to show total charge of this agreement if 1248 kwh were used in the billing period.

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1.9 1.10 1.11 1.12 ▶ DEG AUTO REAL

Question

Did this nspire activity assist you in developing a better understanding of piecewise functions? Explain.

Answer ⌵