

Answer on Question #74066 – Math – Financial Math Question

Samantha is trying to determine how she can save money by cutting her electricity bill. She is currently on a standard use plan for electricity and pays 8.5 cents per kWh. She keeps track of when she uses electricity and is thinking about switching to an interval use plan for electricity which costs 2 cents per kWh for off-peak use and 13 cents per kWh for on-peak use. Off-peak hours are from 8PM - 8AM and on-peak hours are from 8AM - 8PM. Below is the chart of her electricity usage:

Samantha's Electricity Usage Per Month

1100 kWh between 8PM and 8AM

800 kWh between 8AM and 8PM

Explain and justify which plan would best suit her needs.

- a. Samantha should not switch to the interval use plan, which would cost \$126.00 more per month.
- b. Samantha should switch to the interval use plan, which would save her \$126.00 per month.
- c. Samantha should switch to the interval use plan, which would save her \$35.50 per month.
- d. Samantha should not switch to the interval use plan, which would cost \$35.50 more per month.

Solution

Standard use plan:

$$1100 + 800 = 1900$$

$$1900 * 0.085 = 161.50$$

Interval use plan

Off peak: 2 cents ; 8pm to 8am

on peak: 13 cents ; 8am to 8pm

$$\text{Off peak: } 1100 * 0.02 = 22$$

$$\text{on peak: } 800 * 0.13 = 104$$

$$\text{Total: } 22 + 104 = 126$$

$$161.50 - 126 = 35.50 \text{ savings}$$

Answer:

- c. Samantha should switch to the interval use plan, which would save her \$35.50 per month.