

**Buying on Credit** Electric Avenue sells audio/video, computer, and entertainment products. The store offers 0% interest for 12 months on purchases made using an Electric Avenue store credit card.

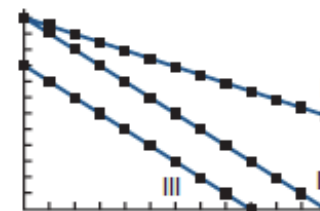
- 4 Emily purchased a television for \$480 using an Electric Avenue store credit card. Suppose she pays the minimum monthly payment of \$20 each month for the first 12 months.
- a. Complete a table of (*number of monthly payments, account balance*) values for the first 6 months after the purchase, then plot those values on a graph.

Number of Monthly Payments	0	1	2	3	4	5	6
Account Balance (in dollars)							

- b. Will Emily pay off the balance within 12 months? How do you know?
- c. If you know Emily's account balance *NOW*, how can you calculate the *NEXT* account balance, after a monthly payment?
- d. Which of the following function rules gives Emily's account balance  $E$  after  $m$  monthly payments have been made?
- $$E = 20m - 480 \quad E = m - 20 \quad E = -20m + 480$$
- $$E = 480 + 20m \quad E = 480 - 20m$$
- e. Determine the rate of change, including units, in the account balance as the number of monthly payments increases from:
- 0 to 2;  
2 to 3;  
3 to 6.
- i. How does the rate of change reflect the fact that the account balance *decreases* as the number of monthly payments increases?
- ii. How can the rate of change be seen in the graph from Part a? In the function rule(s) you selected in Part c?
- f. How can the starting account balance be seen in the table in Part a? In the graph? In the function rule(s) you selected in Part d?

- 5 The diagram below shows graphs of account balance functions for three Electric Avenue customers.

$$\begin{aligned} \text{Emily: } E &= 480 - 20m \\ \text{Darryl: } D &= 480 - 40m \\ \text{Felicia: } F &= 360 - 40m \end{aligned}$$



- a. Match each function rule with its graph. Explain how you could make the matches without calculations or graphing tool help.
- b. What do the numbers in the rules for Darryl's and Felicia's account balances tell you about the values of their purchases and their monthly payments?