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.

1. Emily purchases a television for $580 using an electric Avenue store credit

 card. Suppose she pays the minimum monthly payment of $25 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 rule(s) gives Emily’s account balance *E* after

 *m* monthly payments have been made?

 E = 25m – 580 E = m – 25 E = -25m + 580

 E = 580 + 25m E = 580 - 25m

 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?

2. The diagram below shows graphs of account balance functions for three

 Electric Avenue customers.



a. Match each function rule with

 its graph. Explain how you

 could make the matches

 without calculations or

 graphing tool help (calculator)

b. What do the numbers in the

 rules for Ellen’s and Felicia’s

 account balances tell you about

 the values of their purchases

 and their monthly payments?

c. 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?

Ellen: E = 480 – 20m

Darryl: D = 480 – 40m

Felicia: F = 360 – 20m