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?

$$E = 20m - 480 \qquad E = m - 20 \qquad E = -20m + 480$$

$$E = 480 + 20m \qquad E = 480 - 20m$$

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 a three Electric Avenue customers.

Emily: $E = 480 - 20m$

Darryl: $D = 480 - 40m$

Felicia: $F = 360 - 40m$

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 balances tell you about the values monthly payments?