**2.*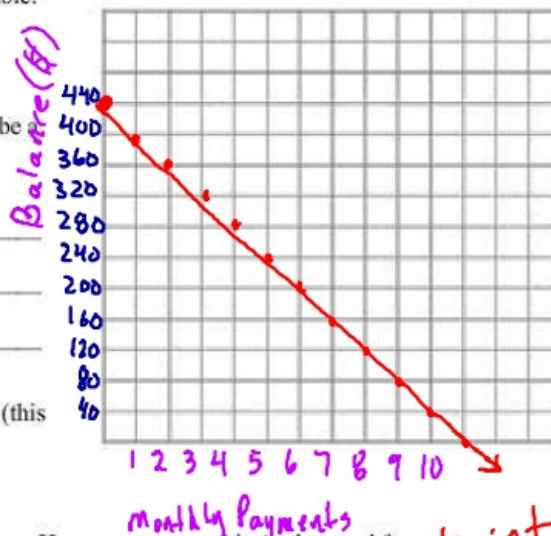* Charlie purchased a new iPad mini. He borrowed the money from his parents who generously will not charge him interest. Suppose he pays his parents the same amount each month. The table below shows the account balance after each monthly payment up to 6 months.

Number of Monthly Payments	1	2	3	4	5	6
Account Balance (in dollars)	400	360	320	280	240	200

a) Make a graph of the data provided in the table. Be sure to clearly label the axes and use appropriate scales.

b) Does Charlie's account balance appear to be a linear function of the number of monthly payments Explain.

yes b/c he is paying $40 per month

c) How much is Charlie paying each month? (this is the rate of change) $40

d) What did the iPad Mini cost? $440 How can you see this on the graph? y-int

e) Write a rule that gives Charlie's balance, B, after m monthly payments have been made. $B = -40m + 440$

f) How much will Charlie's balance be after (1 year)? -40 After 18 **months**? -280

$$B = -40(12) + 440 \qquad B = -40(18) + 440$$

g) When will Charlie owe only $40? (Show your work)

$$B = -40m + 440$$

$$40 = -40m + 440$$

$$\underline{-440 \qquad\qquad -440}$$

$$\frac{-400}{-40} = \frac{-40m}{-40} \qquad \boxed{m = 10}$$

Graph annotations: Balance (B) axis labeled 440, 400, 360, 320, 280, 240, 200, 160, 120, 80, 40. Horizontal axis: 1 2 3 4 5 6 7 8 9 10 monthly payments.