Name:_____

Connecting and Communicating What We Know About Functions

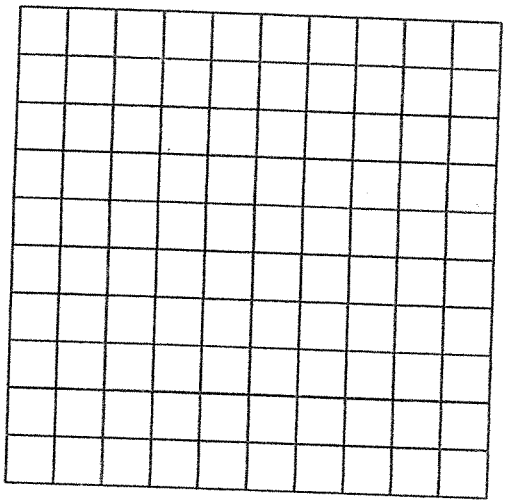
Verbal

Rodney is starting a horse-grooming business.

- His initial expense will be a one-time cost of $200 for equipment.
- His earnings will be $40 per horse groomed.

Rodney's profit will be equal to his earnings for all horses groomed minus his initial expense

Graph



Table

x	y

Analysis

a. What will be Rodney's profit if 15 horses are groomed? Show or explain how you got your answer.

b. On the grid in your Student Answer Booklet, plot eight points with coordinates (x, y), in which x and y are defined as follows:
- x = the number of horses groomed (in whole numbers from 0 through 7)
- y = Rodney's profit, in dollars, if x horses are groomed

Be sure to label the x-axis and y-axis, indicate the scale on each axis, and include a title for your graph.

c. Write an equation of the line that contains all of the points you plotted in part (b). Show or explain how you determined your equation.

d. What is the **x-intercept** of the line represented by your equation in part (c)? Show or explain how you got your answer.

e. Explain the meaning of the x-intercept you determined in part (d) in terms of the context of this problem.