Name _____ Date _____

Slope and Rate of Change: Two Points, Tables and Initial Values

Directions: Answer each question. Type number answers with digits.

1. A line passes through the points (2, 5) and (6, 17), written (x, y). What is its slope?

_____

Phone bill by data used

Data used (GB)	Bill (dollars)
2	34
5	49
8	64

2. The table shows a phone bill for different amounts of data used. The bill is a linear function of the data. What is the rate of change, in dollars per GB?

_____ dollars per GB

3. Jonah saves the same amount each week. After 3 weeks he has $53 saved, and after 7 weeks he has $77 saved. How much did he have at week 0, when he started counting? This amount is the initial value.

_____ dollars

4. What is the slope of the line through $(-3, 4)$ and $(5, -2)$? Points are written (x, y).

A. $-4/3$ B. $3/4$ C. -3 D. $-3/4$

5. The total cost C, in dollars, of a gym membership for m months is $C = 25m + 40$. Which statement is true?

A. The rate of change is $65 per month, and the initial value, the cost at 0 months, is $40.

B. The rate of change is $25 per month, and the initial value, the cost at 0 months, is $0.

C. The rate of change is $40 per month, and the initial value, the cost at 0 months, is $25.

D. The rate of change is $25 per month, and the initial value, the cost at 0 months, is $40.

6. A bike shop's rental cost is a linear function of the rental time. A 2-hour rental costs $26, and a 5-hour rental costs $50. What does an 8-hour rental cost, in dollars?

_____ dollars

7. Points are written (x, y). Which pairs of points lie on a line with a slope of 2? Select the 3 that apply.

☐ A. (2, 7) and (6, 9) ☐ B. (1, 3) and (4, 9) ☐ C. (3, 5) and (5, 1)

☐ D. $(0, -5)$ and (3, 1) ☐ E. $(-2, 4)$ and (2, 12)

8. The graph of a linear function passes through (2, 11) and (5, 20), with points written (x, y). Ravi finds the function. His work is shown.

1. Slope $= (20 - 11) \div (5 - 2) = 9 \div 3 = 3$
2. Initial value $= 11 - 3 = 8$
3. The function is $y = 3x + 8$.

Which step has the first mistake?

A. The function is $y = 3x + 8$.

B. Initial value $= 11 - 3 = 8$

C. There is no mistake.

D. Slope $= (20 - 11) \div (5 - 2) = 9 \div 3 = 3$