

1. The function $f(x) = -3.5x + 8$ models the length of a sparkler x seconds after it is lit. What is the meaning of the y-intercept of the function?

- A. the initial length of the sparkler
- B. the final length of the sparkler
- C. the rate at which the sparkler is burning
- D. the amount of time it will take the sparkler to burn

2. The total cost, in dollars, of membership in a fitness center is given by the function

$$c(m) = 30m + 20$$

Where m is the number of months a person is a member. In dollars, how much is the cost of a membership for half a year?

↓
6 months

$$30(6) + 20$$

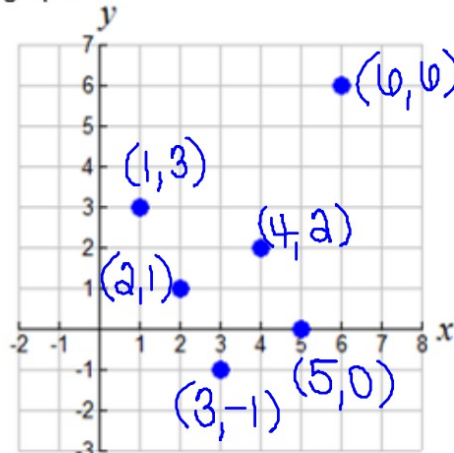
$\$200$

3. Amanda's new car lease costs her $\$190$ a month for a total of 24 months. She put $\$1,700$ down at signing and keeps track each month of the total amount she has spent. Which function could represent the total amount of money Tracy has spent on her lease based on the number of months, x , she has paid?

slope

- A. $y = 190x + 1700$
- B. $y = 190(x + 1700)$
- C. $y = (190 + 1700)x$
- D. $y = 1700x + 190$

4. Describe the domain and range of the graph.



$D: 1, 2, 3, 4, 5, 6$

$R: -1, 0, 1, 2, 3, 6$

5. Which table below represents a **LINEAR** function? How do you know?

~~Table #1~~

x	2	6	8	11	14	17	20
y	1	3	7	13	21	31	43

~~+3 +2~~

~~Table #2~~

x	2	3	4	5	6	7	
y	10	13	18	21	26	29	34

~~+2 +11~~

Table #3

x	2	4	6	8	10	12	14
y	1	6	11	16	21	26	31

+5 +5 +5

- line
- Slope → Constant Rate

6. Write a linear equation that can be written from the table of values below.

x	y
-6	-6
-4	-5
2	-2
6	0

+2 (-6, -6) +1
 +6 (-4, -5) +3
 +4 (2, -2) +2

$$m = \frac{1}{2} (2, -2)$$

$$y - y_1 = m(x - x_1)$$

$$y + 2 = \frac{1}{2}(x - 2)$$

$$y + 2 = \frac{1}{2}x - 1$$

$$y = \frac{1}{2}x - 3$$

7. What is the equation of a line that has a slope of $-\frac{1}{2}$ and passes through the point $(8, -2)$.

$$y - y_1 = m(x - x_1)$$

$$y - (-2) = -\frac{1}{2}(x - 8)$$

$$\frac{y + 2}{-2} = \frac{-\frac{1}{2}x + 4}{-2}$$

$$y = -\frac{1}{2}x + 2$$

8. Two scooter companies have different prices to rent scooters.

- The first company charges a \$5 fee plus \$1 per hour a scooter is rented.
- The second company charges \$2 initial fee plus \$2 per hour a scooter is rented.

What is the minimum number of hours a person would need to rent a scooter for the first company to be a **better deal**?

$$\begin{array}{l} \#1 \\ y = x + 5 \end{array} \quad \begin{array}{l} \#2 \\ y = 2x + 2 \end{array}$$

4 hours

hours	#1	#2
0	5	2
1	6	4
2	7	6
3	8	8
4	9	10