Section 10 - Equations of a Line

1. Jennifer loves to go to the amusement park. Below is a graph that represents the number of rides (x) and the total cost (y). What does the point (10,15) represent?



   a. Jennifer went on 10 rides and spent $15.
   b. Jennifer went on 15 rides and spent $10.
   c. Jennifer was there for 10 hours and spent $15.
   d. Jennifer was there for 15 hours and spent $10.

---

2. Ryan was fundraising to help cure cancer. The initial donation was his own money. Each year he raised funds in a linear fashion. At the end of year 4 he had raised $200,000. At the end of year 7, he had raised $320,000. How much money was in his initial donation?

   a. $40,000
   b. $60,000
   c. $800,000
   d. $100,000

---

3. Which equation correctly represents the linear table?

x	y
3	.5
7	4.5
11	8.5
15	12.5

a. $y = 3x + .5$
b. $y = -x - 2.5$
c. $y = x - 2.5$
d. $y = x + 0$

Use the equation, $f(x) = (x + 5)^2 - 7$ for problems 4 and 5.

4. What is the *y*-intercept of the equation given above?

a. -2
b. 5
c. 7
d. 18

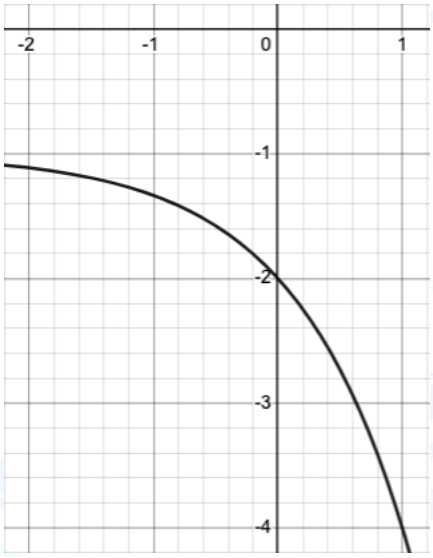
---

5. What is the vertex of the equation given above?

   a. (5,-7)
   b. (5,7)
   c. (-5,-7)
   d. (-5,7)

---

6. Which equation represents the graph seen below?



   a. $y = 3^x - 1$
   b. $y = -3^x - 2$
   c. $y = 3^x - 2$
   d. $y = -3^x - 1$

---

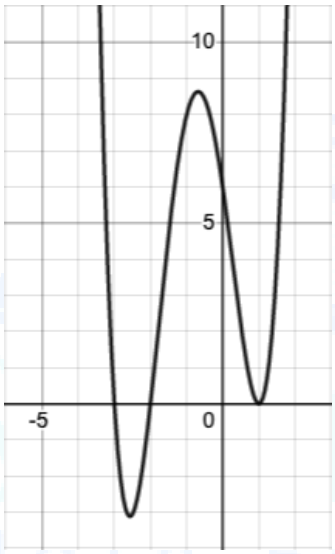
7. Given the table below, and knowing that n ≠ 0, what is the equation of the line?

x	-2	0	2	4
y	$-n - 8$	n	$3n + 4$	$5n + 8$

a. $y = (2n + 4)x + n$
b. $y = (n + 2)x + n$
c. $y = (n)x + n$
d. $y = (n + 2)x + 2$

---

8. Which of the following functions models the graph below?



a. $f(x) = (x + 3)(x + 2)(x - 1)$
b. $f(x) = (x - 3)(x - 2)(x + 1)$
c. $f(x) = (x + 3)(x + 2)(x - 1)^2$
d. $f(x) = (x - 3)(x - 2)(x + 1)^2$

---

9. If the function $f(x) = \sqrt{m}x^2 + 4$ crosses the point (4,8), what is the value of m?

   a. $\frac{1}{2}$
   b. $\frac{1}{4}$
   c. $\frac{1}{8}$
   d. $\frac{1}{16}$

---

10. After years studying plants, a botanist has come up with the formula $m = 2.5n + 10$ to determine how tall in meters, m, the plant will be after n years. What is the difference in height between year 5 and year 10?

---

11. For the equation $f(x) = x^2 + 4x + 12$, what is the minimum value?

END OF SECTION

ANSWER KEY	
Section 10	
Equations of a Line	
1. A	7. B
2. A	8. C
3. C	9. D
4. D	10. 12.5
5. C	11. 6
6. D	

SmartThink
Math Education Tech