

SAT-Like Math Questions

Topic: Polynomial Functions

Calculator NOT Permitted

Easy:

1.) Which of the following gives the solution set for the polynomial equation below?

$$x^2 - 11x + 19 = -5$$

- A. {-3, -8}
- B. {3, 8}
- C. {-3, 8}
- D. {3, -8}

2.) Which of the following is a solution for the equation below?

$$7r^2 - 14r = -7$$

- A. -1
- B. 0
- C. 1
- D. 7

3.) Which of the following is the solution set for the quadratic equation below?

$$7k^2 - 6k - 5 = -5$$

- A. {-6, -5, 7}
- B. $\{\frac{6}{7}, 0\}$
- C. {6, 7}
- D. no solution

4.) If the following equation were to be graphed on the standard x-y plane, at which values would the graph intersect the x axis?

$$y = x^2 + 7x + 10$$

- A. 2 and 5
- B. 7 and 10
- C. -2 and -5
- D. -7 and -10

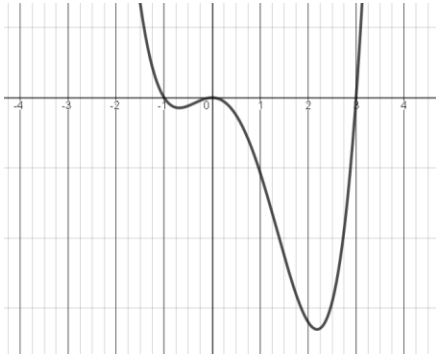
5.) If the following equation was graphed on the standard x-y plane, at which value or values would the graph intersect the y axis?

$$y = x^2 + 7x + 10$$

- A. 2 and 5
- B. -2 and -5
- C. 7
- D. 10

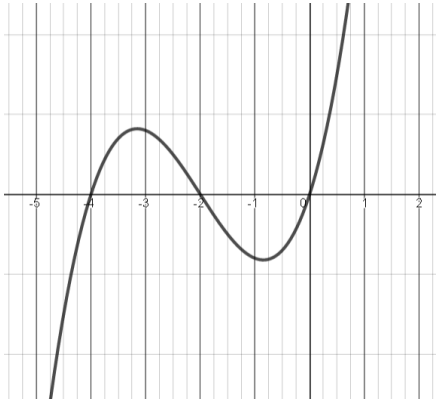
Medium:

6.) Which of the following could be the equation for the polynomial function below?



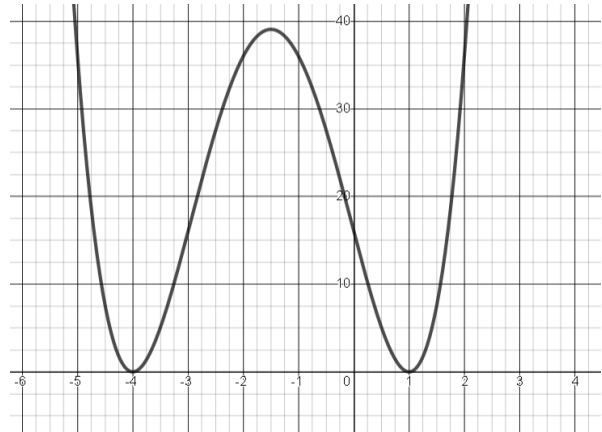
- A. $y = x(x + 1)(x - 3)$
- B. $y = x^2(x - 1)(x + 3)$
- C. $y = x^2(x + 1)(x - 3)$
- D. $y = x(x - 3.3)$

7.) Which of the following could be the equation for the polynomial function below?



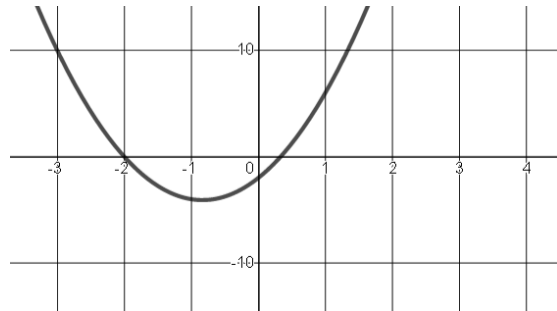
- A. $y = x(x + 4)(x + 2)$
- B. $y = x^2(x - 4)(x - 2)$
- C. $y = x^2(x + 0.75)(x - 0.75)$
- D. $y = x(x - 3)(x - 1)$

8.) Which of the following could be the equation for the polynomial function below?



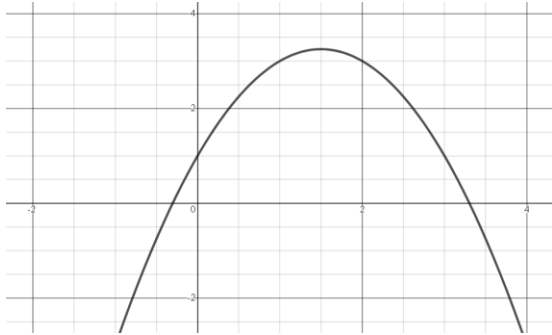
- A. $y = x(x + 4)(x - 1)$
- B. $y = (x + 4)^2(x - 1)^2$
- C. $y = x(x - 4)(x + 1)$
- D. $y = (x - 4)^2(x + 1)^2$

9.) Which of the following could be the equation for the polynomial function below?



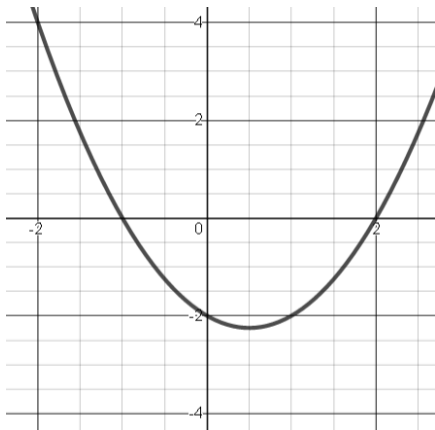
- A. $y = x(x - 4)(x - 2)$
- B. $y = (x - 4)^2$
- C. $y = (x - 2)(2x + 3)$
- D. $y = (x + 2)(3x - 1)$

10.) Which of the following could be the equation for the polynomial function below?



- A. $y = -x^2 - 3x + 1$
- B. $y = x^2 - 0.25x + 3.25$
- C. $y = x^2 - x + 3$
- D. $y = -x^2 + 0.25x - 3.25$

11.) Which of the following could be the equation for the polynomial function below?



- A. $y = -x^2 - x + 2$
- B. $y = x^2 + x - 2$
- C. $y = x^2 - x - 2$
- D. $y = x^2 - 2.125$

12.) How many solutions are there to the following system of equations?

$$y = -x^2 - 3x + 10$$

$$y = x + 5$$

- A. 0
- B. 1
- C. 2
- D. 3

13.) How many solutions are there to the following system of equations?

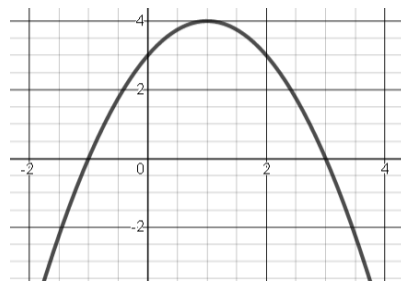
$$y = -\frac{1}{2}x^2 + 7$$

$$y = -2x^2 + 5$$

- A. 0
- B. 1
- C. 2
- D. 3

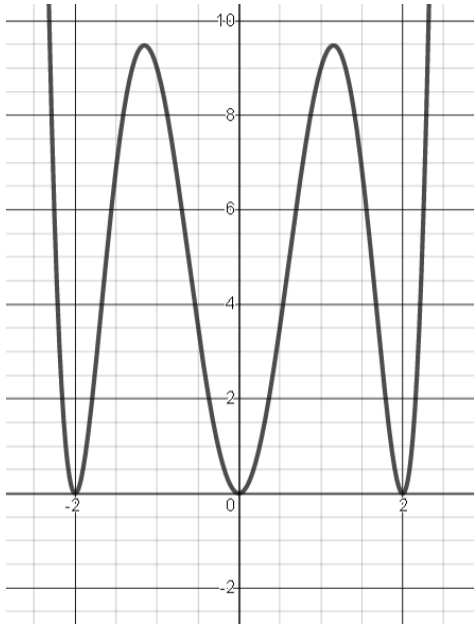
Hard:

14.) Which of the following is an equation for the function below and gives the coordinates of the vertex as constants or coefficients?



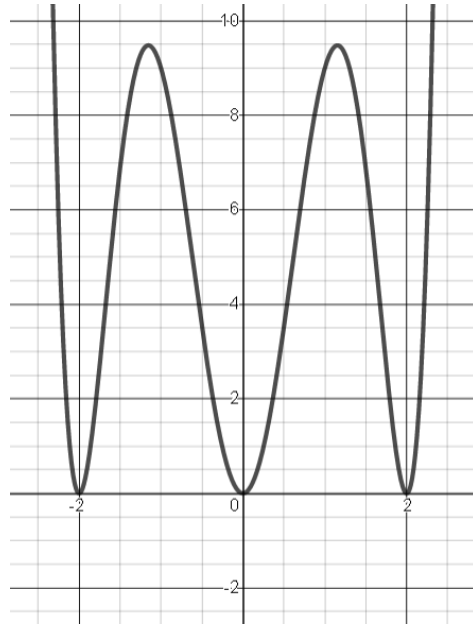
- A. $y = -(x - 3)(x + 1)$
- B. $y = -x^2 + 2x + 3$
- C. $y = (x + 1)^2 + 4$
- D. $y = -(x - 1)^2 + 4$

15.) For which value of k , where k is a constant, does the system of $y=k$ and the function below have exactly 3 solutions?



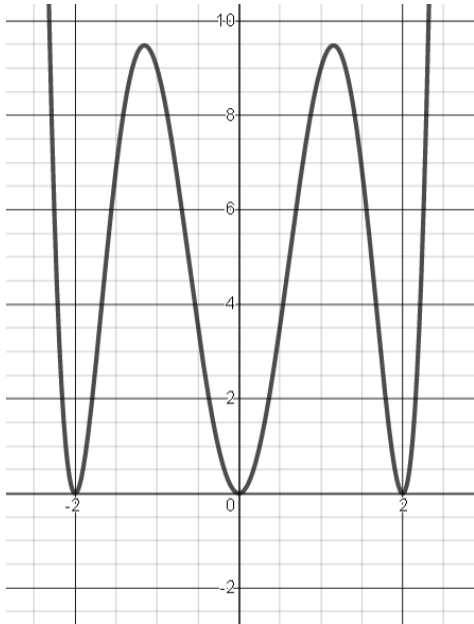
- A. -2
- B. 0
- C. 3
- D. 10

16.) For which value of p , where p is a constant, does the system of $y=p$ and the function below have exactly 2 solutions?



- A. -2
- B. 0
- C. 3
- D. 10

17.) When $g=3$, how many solutions are there to the system of $y=g$ and the function below?



- A. 0
- B. 2
- C. 3
- D. 6

18.) What is the sum of the solutions of the following cubic function?

$$x^3 - 5x^2 + 7x = 0$$

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0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Answer Key:

1.) B

2.) C

3.) B

4.) C

5.) D

6.) C

7.) A

8.) B

9.) D

10.) A

11.) C

12.) C

13.) A

14.) D

15.) B

16.) D

17.) D

18.) 5



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