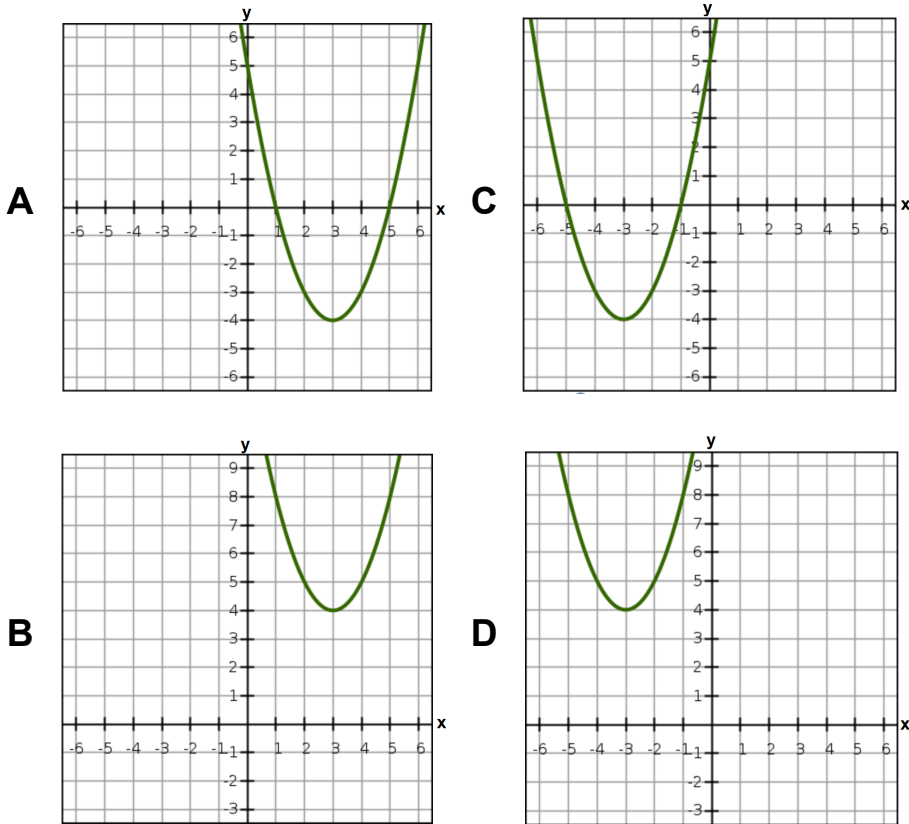


1) What is the equation in slope-intercept form of the line that Passes through the point $(-1, 3)$ and is **perpendicular** to the line represented by $y = \frac{1}{2}x - 4$?

- A. $y = 2x - 3$ C. $y = 2x + 5$
 B. $y = -\frac{1}{2}x + 3$ D. $y = \frac{1}{2}x - 1$

2) The graph of **quadratic parent function** f was transformed to create the graph of $g(x) = f(x - 3) + 4$. Which graph best represents g ?



3) A brick store makes two kinds of bricks, the red bricks weigh 2.5 pounds each and the grey bricks that weigh 4.50 pounds each. The weigh station can weigh **no more** than 500 pounds on it. Which inequality represents all possible combinations of x , the number of red bricks, and y , the number of grey bricks that will be weighed?

- A. $2.5x + 4.5y \leq 500$ C. $4.5x + 2.5y < 500$
 B. $4.5x + 2.5y > 500$ D. $2.5x + 4.5y \geq 500$

4) A bank account earning annual compound interest was opened, and no additional deposits or withdrawals were made after the initial deposit. The balance in the account after x years can be modeled by $b(x) = 200(1.045)^x$. Which statement is the **best interpretation** of one of the values in this function?

- The initial balance of the account **decreases** at a rate of 95.5% each year. The **initial** balance of the account was \$209.
 The balance in the account **increases** at a rate of 4.5% each year. The balance in the account **at the end of one year** is \$200.

5) A store sells two different kinds of notebooks, the **spiral notebook**, and the **hard cover notebooks**. On Monday the store sold 40 notebooks and made \$112. On Tuesday the store sold 34 notebooks and made \$105.

What is the price of one **spiral notebook**? _____.

6) The number of new members joining fitness gym versus how many new members enroll in the towel exchange program they offer at the gym, the relation is shown in the table below.

Number of people joining the fitness gym	Number of members joined the towel exchange program
12	7
42	16
28	12
21	10
17	9

Based on the table, what is the **best prediction** of the number of members joined the towel exchange program if **52** new people joined the gym?

- A. 17 towels B. 18 towels C. 19 towels D. 20 towels

7) The graph of $f(x) = x^2$ was **transformed** to create the graph of $g(x) = f(x - 3)$. Which statement about the graphs is true?

- | | |
|--|---|
| <p>The vertex of the graph of g
A is 3 units to the right of the vertex of the graph of f.</p> | <p>The y-intercept of the graph of g is 3 units below the y-intercept of the graph of f.</p> |
| <p>The vertex of the graph of g
B is 3 units to the left of the vertex of the graph of f.</p> | <p>The graph of g is a D reflection of the graph of f across the x-axis.</p> |

8) What are the **domain and range** of $g(x) = \frac{1}{2}(x + 7)^2 - 50$

- | | |
|---|---|
| <p>A Domain: All real numbers
Range: $x \leq 7$</p> | <p>C Domain: All real numbers
Range: $g(x) \geq -50$</p> |
| <p>B Domain: $x \geq 7$
Range: $g(x) \geq -50$</p> | <p>D Domain: $g(x) \geq -50$
Range: $x \geq 7$</p> |

9) A customer paid \$78 for 5 shirts and 3 pairs of pants. A second customer paid \$12 **less than** the first customer for 2 shirts and 4 pairs of pants. Which **system of equations** can be used to find the price in dollars of each **red shirt, x**, and each **pair of pants, y**?

- | | |
|---|---|
| <p>A $5x + 3y = 78$
$2x + 4y = 66$</p> | <p>C $3x + 5y = 78$
$4x + 2y = 66$</p> |
| <p>B $5x + 3y = 78$
$2x + 4y = 90$</p> | <p>D $3x + 5y = 78$
$4x + 2y = 90$</p> |

10) The amount of **force** applied on a spring **varies directly** with the **distance** the spring stretches. A force of 14 Newton stretches the spring 3 centimeters. How much force should be applied on the spring to stretch the spring 7 centimeters? _____

★ **Bonus** : if $f(x) = x^2 - 2x - 7$ and $g(x) = 4x + 9$
If $f(a) = g(a)$. What is the value of a ?