NAME:_____

1. Find the coordinates of the vertex for the graph of $y = x^2 + 8x - 1$.

   [A] $(8, -1)$ [B] $(4, 4)$ [C] $(-8, -1)$ [D] $(-4, -17)$

2. Without graphing, determine whether the given quadratic function has a maximum or a minimum value and then find the value. $y = -x^2 + 6x - 5$

   [A] minimum, 3   [B] minimum, 4   [C] maximum, 4   [D] maximum, 3

3. Find the equation of the axis of symmetry and the coordinates of the vertex of the graph of the function. $y = 4x^2 + 24x + 3$

   [A] $x = -3; (-3, -33)$ [B] $x = 3; (3, 111)$ [C] $x = -3; (-3, 111)$ [D] $x = 3; (3, 39)$

4. Find the equation of the axis of symmetry and the coordinates of the vertex of the graph of the function. $y = 4x^2 + 8x + 3$

   [A] $x = -1; (-1, 15)$ [B] $x = 1; (1, 15)$ [C] $x = -1; (-1, -1)$ [D] $x = 1; (1, 7)$

5. Find the equation of the axis of symmetry and the coordinates of the vertex of the graph of the function. $y = -x^2 - 4x + 2$

6. Find the equation of the axis of symmetry of $y = 4x^2 + 8x + 4$.

7. Compare the quantities in Column A and Column B.

   <u>Column A</u>   <u>Column B</u>

   the x-coordinate of the vertex of   the x-coordinate of the vertex of

   the graph of $y = x^2 + 4$ the graph of $y = x^2 - 4$

   [A] The quantity in Column A is greater.   [B] The quantity in Column B is greater.

   [C] The quantities are equal.

   [D] The relationship cannot be determined from the information given.

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8. Compare the quantities in Column A and Column B.

    <u>Column A</u>   <u>Column B</u>

    the y-coordinate of the vertex of   the y-coordinate of the vertex of

    the graph of $y = x^2 - 8x + 16$ the graph of $y = -x^2 - 8x + 16$

    [A] The quantity in Column A is greater.   [B] The quantity in Column B is greater.

    [C] The quantities are equal.

    [D] The relationship cannot be determined from the information given.

9. Compare the quantity in Column A with the quantity in Column B.

    maximum value of the function

    <u>Column A</u>   <u>Column B</u>

    $y = -x^2 + 3x - 1$ $y = -2x^2 - x + 5$

    [A] The quantity in Column A is greater.   [B] The quantity in Column B is greater.

    [C] The two quantities are equal.

    [D] The relationship cannot be determined on the basis of the information supplied.

10. Compare the quantities in Column A and Column B.

    <u>Column A</u>   <u>Column B</u>

    the number of x-intercepts of   the number of x-intercepts of

    $y = 4x^2 - 6x + 5$ $y = -2x^2 - 8x - 8$

    [A] The quantity in Column A is greater.   [B] The quantity in Column B is greater.

    [C] The quantities are equal.

    [D] The relationship cannot be determined from the information given.

[1] D

[2] D

[3] A

[4] C

[5] $x = -2$; $(-2, 6)$

[6] $x = -1$

[7] C

[8] B

[9] B

[10] B