

Write the letter for the correct answer in the blank at the right of each question.

1. Consider the equation $y = x^2 + 3x - 4$. Determine whether the function has a maximum or minimum value. State the maximum or minimum value. What are the domain and range of the function?

$$x = \frac{-b}{2a} = \frac{-3}{2(1)} = -1.5$$

$$(-1.5)^2 + 3(-1.5) - 4 = -6.25$$

$$2.25 - 4.5 - 4 = -6.25$$

1. $D: \mathbb{R}$
 $R: y \geq -6.25$

2. A.O.S. $x = -3$ } Vertex $(-3, -16)$

2. What is the equation of the axis of symmetry and the coordinates of the vertex of $y = x^2 + 6x - 7$?

$$x = \frac{-b}{2a} = \frac{-6}{2(1)} = -3$$

$$y = (-3)^2 + 6(-3) - 7 = 9 - 18 - 7 = -16$$

Maximum
 $(0, 4)$

3. Find the coordinates of the vertex of the graph of $y = 4 - x^2$. Identify the vertex as a maximum or a minimum.

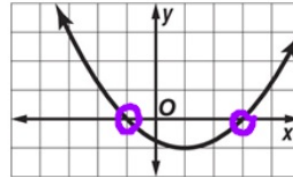
$$x = \frac{-b}{2a} = \frac{-0}{-2} = 0$$

$$y = -x^2 + 0x + 4$$

$$y = -(0)^2 + 0 + 4 = 4$$

3. $(0, 4)$

4. What are the roots of the quadratic equation whose related function is graphed at the right?



$$x = -1, 3$$

4. _____

