

NC EMPT'S
QUESTION?
of The week

Simplify this expression: $5 - 2[-2^2 - (3 \cdot 2^3 - 12 \div \sqrt{9})]$

- A. -72 B. -48 C. 53 D. 37 E. 21

Last Week's Answer

What is the equation of the axis of symmetry of the graph of the equation $y = -x^2 + 6x + 4$?

- A. $x = \frac{1}{12}$ B. $x = -2$ **C. $x = 3$** D. $x = -3$ E. $y = 3$

Solution:

The given equation, $y = -x^2 + 6x + 4$, is in the general form of a parabola that opens either up or down, $y = ax^2 + bx + c$. Since the value of a is negative, the parabola opens down. The axis of symmetry is a vertical line that passes through the vertex of the parabola. One way to find the x -coordinate of the vertex is to let $x = -\left(\frac{b}{2a}\right)$. So $x = -\left(\frac{6}{2(-1)}\right) = -(-3) = 3$. Therefore the vertical line that passes through the vertex must have the same x -value of 3 and the equation of this line of symmetry is $x = 3$.

Each week, we'll reveal the answer to the previous week's question!

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