



Which of the following is an equivalent form of the equation of the graph shown in the xy -plane above, from which the coordinates of vertex A can be identified as constants in the equation?

- A) $y = (x + 3)(x - 5)$
- B) $y = (x - 3)(x + 5)$
- C) $y = x(x - 2) - 15$
- D) $y = (x - 1)^2 - 16$

sign of a , the constant k must be the minimum or maximum value of q , and h is the value of x for which $a(x - h)^2 = 0$ and $q(x)$ has value k .) This form can be reached by completing the square in the expression that defines q . The given equation is $y = x^2 - 2x - 15$, and since the coefficient of x is -2 , the equation can be written in terms of $(x - 1)^2 = x^2 - 2x + 1$ as follows: $y = x^2 - 2x - 15 = (x^2 - 2x + 1) - 16 = (x - 1)^2 - 16$. From this form of the equation, the coefficients of the vertex can be read as $(1, -16)$.

Choices A and C are incorrect because the coordinates of the vertex A do not appear as constants in these equations. Choice B is incorrect because it is not equivalent to the given equation.