

6.

Solution

To find the vertex, we look at the coefficients in the function $q(j) = aj^2 + bj + c$
in this equation, $a = 1$ and $b = 4$

The first coordinate of the vertex has the formula: $\frac{-b}{2a}$ now, plugging into formula to get:

$$\frac{-b}{2a} = -\frac{4}{2(1)} = -2$$

The second coordinate of the vertex is $q(-2) = 1(-2)^2 + 4(-2) - 4$
 $= -8$

Therefore, the vertex of the graph of f is $(-2, -8)$