3.

Solution

To find the vertex, we look at the coefficients in the function $n(m) = am^2 + bm + c$
in this equation, $a = 1$ and $b = 3$
The first coordinate of the vertex has the formula: $\frac{-b}{2a}$ now, plugging into formula to get:

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

The second coordinate of the vertex is $n\left(-\frac{3}{2}\right) = 1\left(-\frac{3}{2}\right)^2 + 3\left(-\frac{3}{2}\right) - 7$

$= -\frac{37}{4}$

Therefore, the vertex of the graph of f is $\left(-\frac{3}{2}, -\frac{37}{4}\right)$