3.

Solution

To find the vertex, we look at the coefficients in the function $x(y)=ay^2+by+c$
in this equation, $a=2$ and $b=3$
The first coordinate of the vertex has the formula: $\frac{-b}{2a}$ now, plugging into formula to get:
$\frac{-b}{2a}=-\frac{3}{2(2)}=-\frac{3}{4}$
The second coordinate of the vertex is $x(-\frac{3}{4}) = 2(-\frac{3}{4})^2+3(-\frac{3}{4})-3$
$=-\frac{33}{8}$
Therefore, the vertex of the graph of f is $(-\frac{3}{4},-\frac{33}{8})$