3.

Solution

Quadratic function: is a function that can be written in the form:

$g(k)=ak^2+bk+c$ where a, b, and c are real numbers and $a\neq 0$

we have $g(k)=3k^2+8k-15$, note: $3k^2+8k-15$ is in kg-plane

Here, we know that $a=3$, $b=8$, $c=-15$

Since $a>0$,we know that the g-coordinate of the vertex is a minimum. However,to find the g-coordinate of our vertex we first need to find the k-coordinate of the vertex by using $k=-\frac{b}{2a}=-\frac{8}{6}=-\frac{4}{3}$ Now that we have the k-coordinate, we can find the g-coordinate of the vertex by finding $g(-\frac{4}{3})=3(-\frac{4}{3})^2+8(-\frac{4}{3})-15=\frac{16}{3}-\frac{32}{3}-15=-\frac{61}{3}$ Minimum$=-\frac{61}{3}$