1.

Solution

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

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

we have $m(k)=k^2-5k+7$, note: k^2-5k+7 is in km-plane

Here, we know that $a=1$, $b=-5$, $c=7$

Since $a>0$,we know that the m-coordinate of the vertex is a minimum. However,to find the m-coordinate of our vertex we first need to find the k-coordinate of the vertex by using $k=-\frac{b}{2a}=-\frac{-5}{2}=\frac{5}{2}$ Now that we have the k-coordinate, we can find the m-coordinate of the vertex by finding $m(\frac{5}{2})=1(\frac{5}{2})^2-5(\frac{5}{2})+7=\frac{25}{4}-\frac{25}{2}+7=\frac{3}{4}$ Minimum$=\frac{3}{4}$