1.

Solution

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

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

we have $k(m)=2m-3m^2$, note: $2m-3m^2$ is in mk-plane

Here, we know that $a=-3$, $b=2$, $c=0$

Since $a<0$,we know that the k-coordinate of the vertex is a maximum.However,to find the k-coordinate of our vertex we first need to find the m-coordinate of the vertex by using $m=-\frac{b}{2a}=-\frac{2}{-6}=\frac{1}{3}$ Now that we have the m-coordinate, we can find the k-coordinate of the vertex by finding $k(\frac{1}{3})=-3(\frac{1}{3})^2+2(\frac{1}{3})-0=-\frac{1}{3}+\frac{2}{3}-0=\frac{1}{3}$ Maximum$=\frac{1}{3}$