1.

Solution

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

$m(g)=ag^2+bg+c$ where a, b, and c are real numbers and $a\neq 0$

we have $m(g)=-3g^2-13g+23$, note: $-3g^2-13g+23$ is in gm-plane

Here, we know that $a=-3$, $b=-13$, $c=23$

Since $a<0$,we know that the m-coordinate of the vertex is a maximum.However,to find the m-coordinate of our vertex we first need to find the g-coordinate of the vertex by using $g=-\frac{b}{2a}=-\frac{-13}{-6}=-\frac{13}{6}$ Now that we have the g-coordinate, we can find the m-coordinate of the vertex by finding $m\left(-\frac{13}{6}\right)=-3\left(-\frac{13}{6}\right)^2-13\left(-\frac{13}{6}\right)+23=-\frac{169}{12}+\frac{169}{6}+23=\frac{445}{12}$ Maximum$=\frac{445}{12}$