1.

Solution

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

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

we have $s(m)=-m^2+14m-15$, note: $-m^2+14m-15$ is in ms-plane

Here, we know that $a=-1$, $b=14$, $c=-15$

Since $a<0$, we know that the s-coordinate of the vertex is a maximum. However, to find the s-coordinate of our vertex we first need to find the m-coordinate

of the vertex by using $m=-\frac{b}{2a}=-\frac{14}{-2}=7$ Now that we have the m-coordinate, we can find the s-coordinate

of the vertex by finding $s(7)=-1(7)^2+14(7)-15=-49+98-15=34$ Maximum$=34$