5.

Solution

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

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

we have $j(m)=-m^2+4m+20$, note: $-m^2+4m+20$ is in mj-plane

Here, we know that $a=-1$, $b=4$, $c=20$

Since $a<0$,we know that the j-coordinate of the vertex is a maximum.However,to find the j-coordinate of our vertex we first need to find the m-coordinate of the vertex by using $m=-\frac{b}{2a}=-\frac{4}{-2}=2$ Now that we have the m-coordinate, we can find the j-coordinate of the vertex by finding $j(2)=-1(2)^2+4(2)+20=-4+8+20=24$ Maximum=24