2.

Solution

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

$u(y)=ay^2+by+c$ where a, b, and c are real numbers and $a\neq 0$

we have $u(y)=-3y^2-6y+10$, note: $-3y^2-6y+10$ is in yu-plane

Here, we know that $a=-3$, $b=-6$, $c=10$

Since $a<0$,we know that the u-coordinate of the vertex is a maximum.However,to find the u-coordinate of our vertex we first need to find the y-coordinate of the vertex by using $y=-\frac{b}{2a}=-1=-1$ Now that we have the y-coordinate, we can find the u-coordinate

of the vertex by finding $u(-1)=-3(-1)^2-6(-1)+10=-3+6+10=13$ Maximum=13