5.

Solution

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

$d(x)=ax^2+bx+c$ where a, b, and c are real numbers and $a\neq 0$

we have $d(x)=-3x^2+6x-18$, note: $-3x^2+6x-18$ is in xd-plane

Here, we know that $a=-3$, $b=6$, $c=-18$

Since $a<0$,we know that the d-coordinate of the vertex is a maximum.However,to find the d-coordinate of our vertex we first need to find the x-coordinate of the vertex by using $x=-\frac{b}{2a}=-\frac{6}{-6}=1$ Now that we have the x-coordinate, we can find the d-coordinate

of the vertex by finding $d(1)=-3(1)^2+6(1)-18=-3+6-18=-15$ Maximum$=-15$