2.

Solution

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

$z(n)=an^2+bn+c$ where a, b, and c are real numbers and $a\neq 0$

we have $z(n)=-3n^2+6n+14$, note: $-3n^2+6n+14$ is in nz-plane

Here, we know that a=-3, b=6, c=14

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

of the vertex by finding $z(1)=-3(1)^2+6(1)+14=-3+6+14=17$ Maximum=17