4.

Solution

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

$t(q)=aq^2+bq+c$ where a, b, and c are real numbers and $a\neq 0$

we have $t(q)=-3q^2+5q-5$, note: $-3q^2+5q-5$ is in qt-plane

Here, we know that $a=-3$, $b=5$, $c=-5$

Since $a<0$,we know that the t-coordinate of the vertex is a maximum.However,to find the t-coordinate of our vertex we first need to find the q-coordinate of the vertex by using $q=-\frac{b}{2a}=-\frac{5}{-6}=\frac{5}{6}$ Now that we have the q-coordinate, we can find the t-coordinate of the vertex by finding $t\left(\frac{5}{6}\right)=-3\left(\frac{5}{6}\right)^2+5\left(\frac{5}{6}\right)-5=-\frac{25}{12}+\frac{25}{6}-5=-\frac{35}{12}$ Maximum$=-\frac{35}{12}$