

2.

Solution

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

$t(u) = au^2 + bu + c$ where a , b , and c are real numbers and $a \neq 0$

we have $t(u) = u^2 + 12u - 25$, note: $u^2 + 12u - 25$ is in ut -plane

Here, we know that $a=1$, $b=12$, $c=-25$

Since $a > 0$, we know that the t -coordinate of the vertex is a minimum. However, to find the t -coordinate of our vertex we first need to find the u -coordinate of the vertex by using $u = -\frac{b}{2a} = -\frac{12}{2} = -6$ Now that we have the u -coordinate, we can find the t -coordinate

of the vertex by finding $t(-6) = 1(-6)^2 + 12(-6) - 25 = 36 - 72 - 25 = -61$ Minimum = -61