

3.

Solution

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

$p(f) = af^2 + bf + c$ where a , b , and c are real numbers and $a \neq 0$

we have $p(f) = f^2 + 14f - 6$, note: $f^2 + 14f - 6$ is in fp -plane

Here, we know that $a=1$, $b=14$, $c=-6$

Since $a > 0$, we know that the p -coordinate of the vertex is a minimum. However, to find the p -coordinate of our vertex we first need to find the f -coordinate of the vertex by using $f = -\frac{b}{2a} = -\frac{14}{2} = -7$ Now that we have the f -coordinate, we can find the p -coordinate

of the vertex by finding $p(-7) = 1(-7)^2 + 14(-7) - 6 = 49 - 98 - 6 = -55$ Minimum = -55