6.

Solution

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

$p(v) = av^2 + bv + c$ where a, b, and c are real numbers and $a \neq 0$

we have $p(v) = -2v^2 + 14v + 4$, note: $-2v^2 + 14v + 4$ is in vp-plane

Here, we know that $a = -2$, $b = 14$, $c = 4$

Since $a < 0$, we know that the p-coordinate of the vertex is a maximum. However, to find the p-coordinate of our vertex we first need to find the v-coordinate

of the vertex by using $v = -\frac{b}{2a} = -\frac{14}{-4} = \frac{7}{2}$ Now that we have the v-coordinate, we can find the p-coordinate

of the vertex by finding $p(\frac{7}{2}) = -2(\frac{7}{2})^2 + 14(\frac{7}{2}) + 4 = -\frac{49}{2} + 49 + 4 = \frac{57}{2}$ Maximum $= \frac{57}{2}$