6.

Solution

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

$e(x)=ax^2+bx+c$ where a, b, and c are real numbers and $a\neq 0$

we have $e(x)=-2x^2+13x+6$, note: $-2x^2+13x+6$ is in xe-plane

Here, we know that $a=-2$, $b=13$, $c=6$

Since $a<0$,we know that the e-coordinate of the vertex is a maximum.However,to find the e-coordinate of our vertex we first need to find the x-coordinate of the vertex by using $x=-\frac{b}{2a}=-\frac{13}{-4}=\frac{13}{4}$ Now that we have the x-coordinate, we can find the e-coordinate of the vertex by finding $e(\frac{13}{4})=-2(\frac{13}{4})^2+13(\frac{13}{4})+6=-\frac{169}{8}+\frac{169}{4}+6=\frac{217}{8}$ Maximum$=\frac{217}{8}$