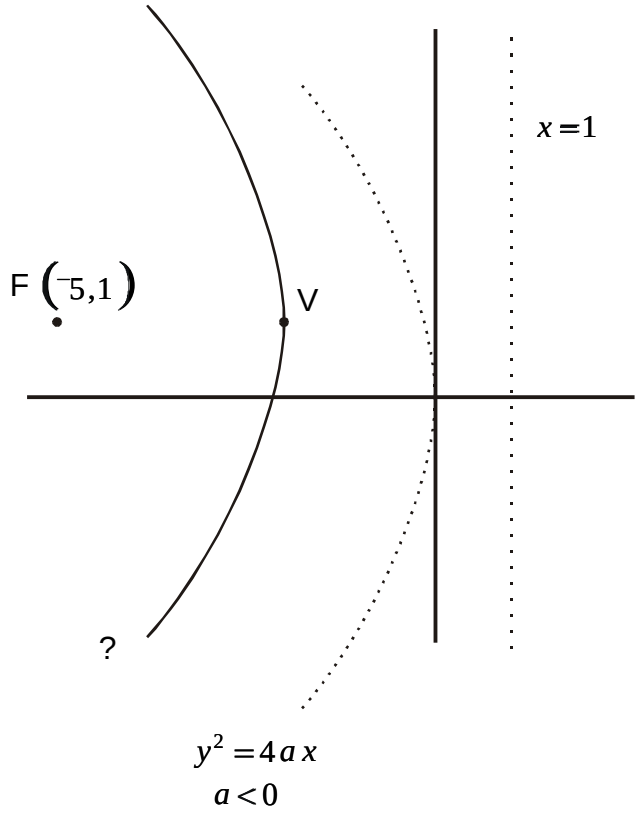
When the vertex is not at the origin, the standard form can be adjusted to allow for translations.

Example - parabola with focus $\left(^{-}5,1\right)$ and directrix $x=1$.



The distance between the focus and directrix is 6.

The vertex V is halfway between the focus and the directrix at $\left(^{-}2,1\right)$.

If the vertex were at the origin, the equation would be $y^2=4ax$ with $a=\frac{^{-}6}{2}=^{-}3$:

$$y^2=4\times^{-}3\times x$$
$$y^2=^{-}12x$$

After a translation of 2 to the left and 1 up, the equation becomes:

$$(y-1)^2=^{-}12(x+2)$$