Name: Mosab Mohamed group: B20-04 variant: 1

P1.

(a) ~~$x^2 + y = 0$~~ $x^2 - 2x + y = 0$

standard form = $4p(y-k) = (x-h)^2$

$x^2 - 2x + y \Rightarrow x^2 - 2x = -y \Rightarrow x^2 - 2x + 1 = -y + 1 \Rightarrow$

$\Rightarrow 4(-\frac{1}{4})(y-1) = (x-1)^2$ (vertical)

$(h,k) = (1,1)$ $p = (-\frac{1}{4})$

focus $= (h, k+p) = (1, 1(-\frac{1}{4})) = (1, \frac{3}{4})$

directrix $= y = 1 - (-\frac{1}{4}) \Rightarrow y = \frac{5}{4}$

length latus rectum $= 4a$ (4x distance between focus and vertex) $= 4(\frac{1}{4})$

$= 1$