



$$\overline{PF} = \sqrt{(x+1)^2 + (y-1)^2}$$

$$d(dP) = y$$

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

$$y^2 = (x+1)^2 + (y-1)^2$$

$$\cancel{y}^2 = x^2 + 1 + 2x + \cancel{y}^2 + 1 - 2y$$

$$2y = x^2 + 2x + 2$$

$$y = \frac{1}{2}x^2 + x + 1$$