

Rewrite the equation of the parabola in standard form by completing the square.

Equation:  $x + 6y^2 - 12y + 7 = 0$

$$x + 7 = -6y^2 + 12y$$

$$x + 7 = -6(y^2 - 2y)$$

$$x + 7 - \underline{6} = -6(y^2 - 2y + \underline{1})$$

$$x + 1 = -6(y - 1)^2$$

Standard

Form:

$$\boxed{x = -6(y - 1)^2 - 1}$$

Vertex  $(-1, 1)$

Opens left (because  $y$ -variable is squared &  $a < 0$ )

Factor out coefficient on  $y^2$  before completing the square

Distance of Vertex to Focus:

$$\left| \frac{1}{4(-6)} \right| = \left| -\frac{1}{24} \right| = \boxed{\frac{1}{24}}$$

Focus:  $(-1\frac{1}{24}, 1)$

Directrix:  $x = -2\frac{3}{24}$