Write the equation in vertex form $y = a(x-h)^2 + k$

$$\frac{y}{-2} = \frac{-2x^2}{-2} + \frac{10x}{-2} + \frac{1}{-2}$$

$$\left(\frac{5}{2}\right)^2 = \frac{25}{4}$$

$$\frac{y}{-2} = x^2 - 5x - \frac{1}{2}$$

$$\frac{y}{-2} + \frac{1}{2} = x^2 - 5x + \frac{25}{4}$$

$$+\frac{25}{4}$$

$$\frac{y}{-2} + \frac{27}{4} = \left(x - \frac{5}{2}\right)\left(x - \frac{5}{2}\right)$$

$$\frac{y}{-2} + \frac{27}{4} = \left(x - \frac{5}{2}\right)^2$$

$$-2\left(\frac{y}{-2}\right) = -2\left(\left(x - \frac{5}{2}\right)^2\right) - \left(\frac{27}{4}\right)^{-2}$$

$$y = -2\left(x - \frac{5}{2}\right)^2 + \frac{27}{2}$$

$$\cup\left(\frac{5}{2}, \frac{27}{2}\right)$$

$y = 3x^2 + 9x - 7$

$x = -\frac{b}{2a} = \frac{-9}{2(3)} = \frac{-9}{6} = \frac{-3}{2}$

$y = 3\left(-\frac{3}{2}\right)^2 + 9\left(-\frac{3}{2}\right) - 7$

$= -\frac{55}{4}$

$V\left(-\frac{3}{2}, -\frac{55}{4}\right)$

$y = a(x-h)^2 + k$

$y = 3\left(x + \frac{3}{2}\right) - \frac{55}{4}$

$y = x^2 + 8x - 7$

$y + 7 = x^2 + 8x + 16$

$+16$

$y + 23 = (x+4)^2$

$y = (x+4)^2 - 23$

$V(-4, -23)$

$y = x^2 - 6x + 10$

$y - 10 = x^2 - 6x + 9$

$+9$

$y - 1 = (x-3)^2$

$y = (x-3)^2 + 1$

$V(3, 1)$