

Example 1: Classify and graph.

Parabola

$$y^2 - 8y + 4x + 24 = 0$$

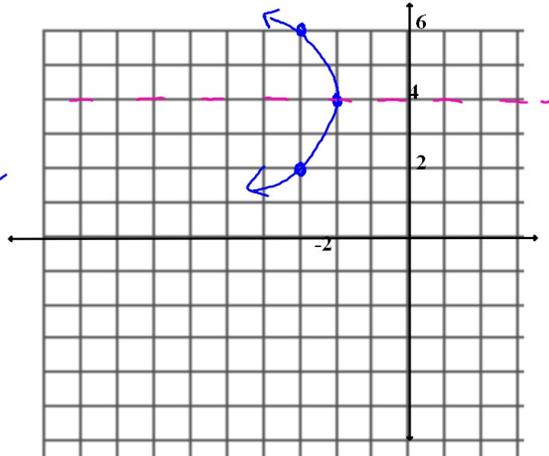
$$y^2 - 8y + \underline{16} = -4x - 24 + 16$$

$$(y - 4)^2 + 8 = -4x - 8$$

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

$$v(-2, 4)$$

x	y
-3	6
-3	2



Example 2: Classify and graph.

$$4y^2 - x^2 - 16y - 4x - 4 = 0$$

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

$$4(y - 2)^2 - (x + 2)^2 = 16$$

$$\frac{(y - 2)^2}{4} - \frac{(x + 2)^2}{16} = 1$$

$$v(-2, 2)$$

