Graph each equation be sure to identify the important features such as the center, verticies, foci, directrix and asymptotes.
(y-7)^2 = -12(x+1)

Solution

$$(y - 7)^2 = -12(x + 1)$$

The graph of the equation is a parabola.

Parabola opens to the left.

Parabola has the vertex, focus, and directrix

Compare the equation above with the standard form of the parabola with vertex (h, k) and axis of symmetry y = k is (y - k)² = 4p(x − h).

$$h = -1, k = 7, p = -3$$

The vertex of the parabola is (*h, k*) = **(-1, 7)**, and axis of symmetry y = 7.

The focus of the parabola is $(h + p, k) = (-1 - 3, 7) = (-4, 7)$.

The directrix of the parabola is $x = h - p = -1 + 3 = 2$

Graph of the parabola: