9.3 Quadratic Inequalities in Two Variables

Combine 9.1 and 9.2:

1. Graph the inequality as an equal sign: dotted for < or >, solid if ≤ or ≥

2. Choose a test point: if the point is true, then shade that region, if the point is not true, then shade the other region.

Sketching quadratics in form: \( y = a(x - p)^2 + q \)

- \( V(p, q) \) is the point of the vertex

- \( a \) determines the direction and the stretch or compression of the graph.

Example 1:

Graph

\[
y > 2(x - 1)^2 - 3
\]
Sketching quadratics in the form: \( y = Ax^2 + Bx + C \)

Example 2:

Graph

\[ y \leq -x^2 + 2x + 4 \]