Lesson 5 Non-Linear Inequalities in Two Variables

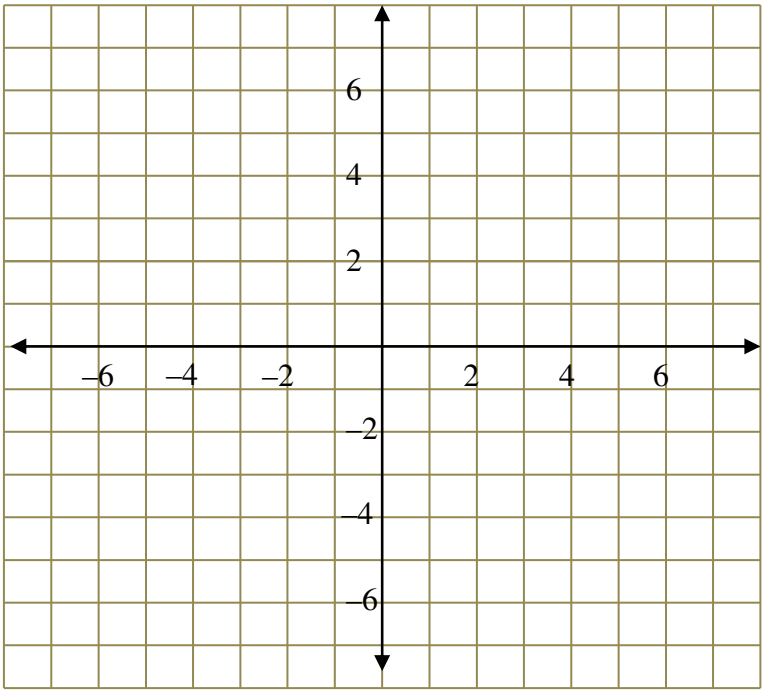
Steps:

1. Graph the quadratic equation
   - Determine whether the curve should be broken(dashed) or solid

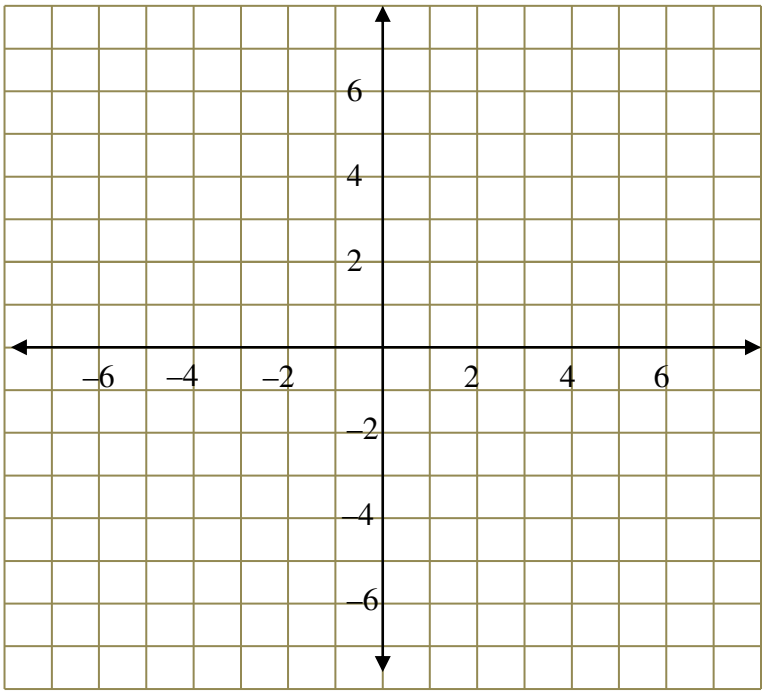
2. Determine where to shade
   - Choose a test point

Example 1: Sketch each of the following:

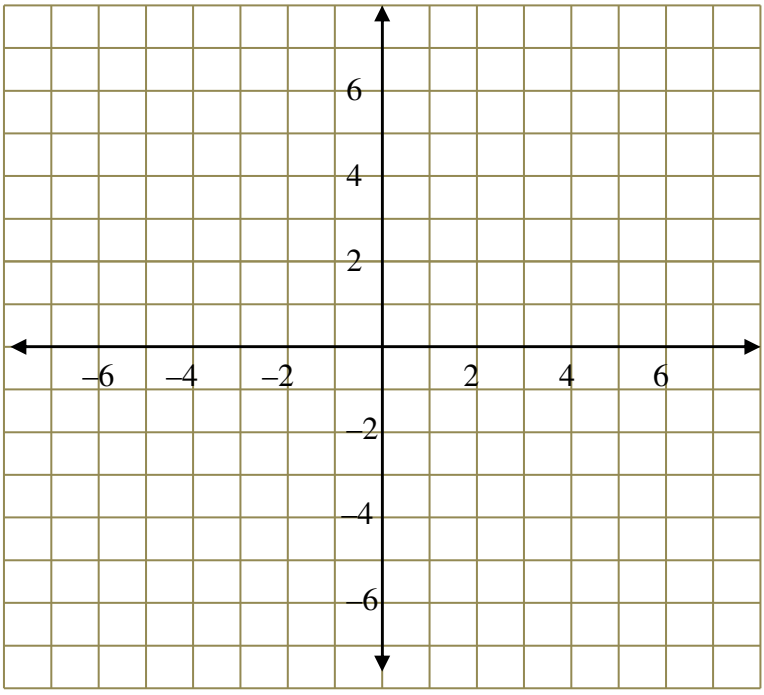
a.) $y < 3x^2 - 4$



b.) $y \geq x^2 - 2x - 5$

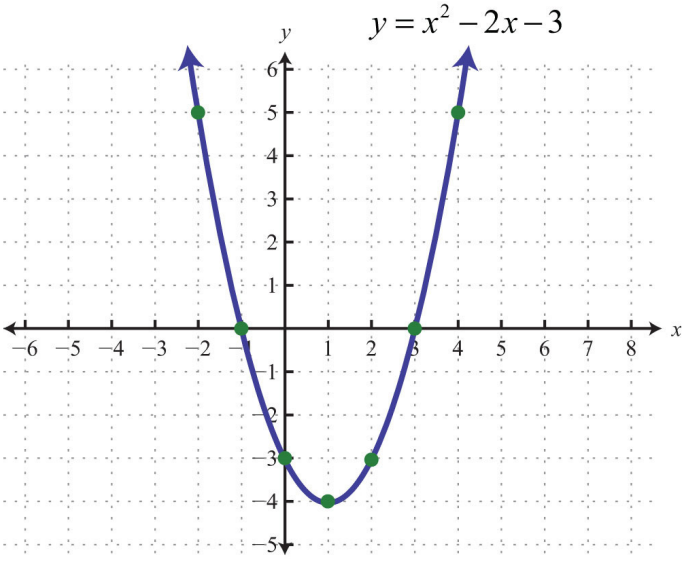


c.) $y < 2x^2 - 8x + 1$



Example 2

Use the given graph to write the solution of the corresponding quadratic inequality $x^2 - 2x - 3 \geq 0$.



Example 3

Solve $x^2 - x + 3 \leq 0$.

<u>Bulawka's Bullets</u>

- Watch the difference between $y \leq ax^2 + bx + c$ (two variables so graph) and $ax^2 + bx + c \leq 0$ (one variable so chart)
- Make sure you use a broken curve for $<$ or $>$