Math 150 Lecture Notes
Graphs of Equations

Two ways to **solve an equation graphically**:

1. Write each side of the equation as a related function and find the intersection of the two functions

   OR

2. Rewrite the equation in a form such that one side is 0, and find the x-intercepts (roots) of the corresponding function for the nonzero side of the equation.

Two **solve an inequality graphically**:

1. Follow the same procedure for solving an equation in #1 above, but examine the graph for the solution set that satisfies the inequality rather than the equation.

   OR

2. Follow the same procedure for solving an equation in #1 above, but find the solution set either above or below the x-axis and/or including the axis (depending on whether you have $<$, $>$, $\leq$, or $\geq$).

<u>Example 1:</u> $x^4 - 8x^2 + 2 = 0$

<u>Example 2:</u> $\sqrt{0.5x^2 + 1} \leq 2|x|$