MATH 156: Precalculus
Fall 2015
Worksheet §1.11: Solving Equations and Inequalities Graphically

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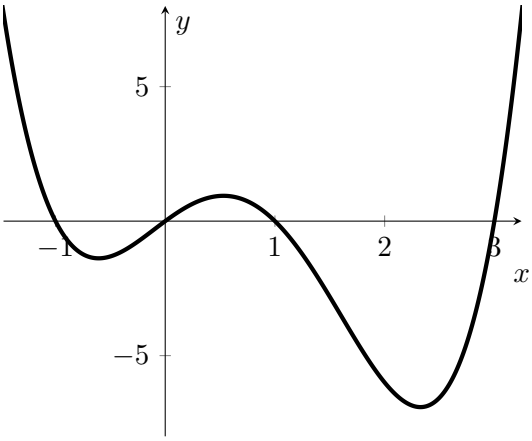
By the end of this section you must know how to:

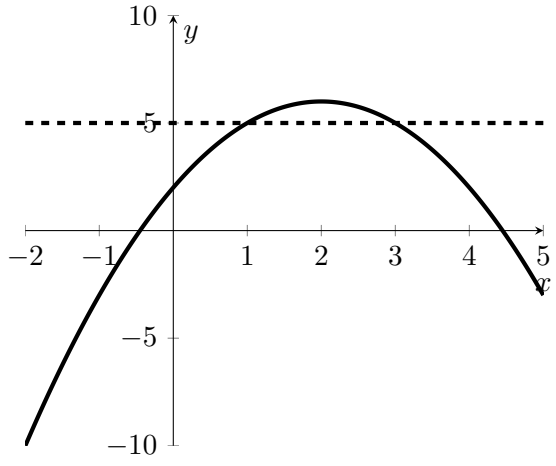
- solve inequalities graphically
- solve equations graphically



Use the graph of $y = x^4 - 3x^3 - x^2 + 3x$ (left) to find all solutions to:

(1) the equation $x^4 - 3x^3 - x^2 + 3x = 0$ and

(2) the inequality $x^4 - 3x^3 - x^2 + 3x > 0$.



The graphs of $y = 6 - (x-2)^2$ and $y = 5$ are shown on the axes on the left. (Which is which?) Answer the questions below BOTH graphically and algebraically.

(1) Solve $6 - (x-2)^2 = 5$.

(2) Solve $6 - (x-2)^2 = 0$.

(3) Find the interval when $6 - (x-2)^2 > 5$

Problem: On the same set of axes, graph $y = x^2$ and $y = 1 - x$. Use the graphs to answer the questions below.

1. Solve $x^2 = 1 - x$.
2. Describe the interval of the real line such that $1 - x \geq x^2$.