

Partial Solution of Homework Assignment 1

web version: <http://www.math.toronto.edu/~drorbn/classes/0203/157AnalysisI/Sol01/Sol01.html>

Warning: The solutions presented here are partial at best. They are only intended for use as checks and hints and are often incomplete.

Question 1-11-ii: $\{x : -5 < x < 11\}$.

Question 1-11-iv: $\{x : x < 1 \text{ or } x > 2\}$.

Question 1-11-vi: The empty set.

Question 1-11-viii: Same solutions as for $(x - 1)(x + 2) = 3$, which is a simple quadratic equation.

Question 1-12-iv: Replace y by $-y$ in $|x + y| \leq |x| + |y|$.

Question 1: Write $ax^2 + bx + c = a\left(x + \frac{b}{2a}\right)^2 - \frac{b^2 - 4ac}{4a}$ and use the fact that $\left(x + \frac{b}{2a}\right)^2$ is always positive (except for one value of x).