Math 2702 - Introduction to Proofs, Spring 2008, Wheeler

HOMEWORK #2
Due date: begining of class Friday, February 8.

Problem 1.
Let $ax^2+bx+c=0$ where $a, b, c \in \mathbb{R}$. Derive the quadratic formula (the recommended approach is to complete the square; but you may derive the formula by any appropriate method).

Problem 2.
Do exercise 1.3 *in the text. Justify your answer (i.e. give a proof or explain why your technique gives a maximum).*

Problem 3.
Do exercise 1.4 *in the text. Justify your answer (i.e. give a proof or explain why your technique gives a maximum).*

Problem 4.
Do exercise 1.8 *in the text.*

Problem 5.
Do exercise 1.27 *in the text.*

Problem 6.
Do exercise 1.28 *in the text.*

Problem 7.
Do exercise 1.36 *in the text.*

Problem 8.
Let A and B be sets. Prove both

(1) $\overline{A \cup B} = \overline{A} \cap \overline{B}$ *and*
(2) $\overline{A \cap B} = \overline{A} \cup \overline{B}$.