

CSE311 Quiz Section: April 12, 2012

1. (Section 2.22, Exercise 12-13, 7th Edition) Prove the following (these are called absorption laws):

$$(a) \quad A \cup (A \cap B) = A$$

$$(b) \quad A \cap (A \cup B) = A$$

2. (Section 2.1, Exercise 9, 7th Edition, modified slightly) Determine which of these statements are true and which false

$$(a) \quad 0 \in \emptyset$$

$$(b) \quad \emptyset \in \{0\}$$

$$(c) \quad \{0\} \subseteq \emptyset$$

$$(d) \quad \emptyset \subseteq \{0\}$$

$$(e) \quad \{0\} \in \{0\}$$

$$(f) \quad \{0\} \subseteq \{0\}$$

$$(g) \quad \{\emptyset\} \subseteq \{\emptyset\}$$

3. (Section 2.2, Exercise 29, 7th Edition) What can you say about the sets A and B if we know that:

$$(a) \quad A \cup B = A$$

$$(b) \quad A \cap B = A$$

$$(c) \quad A - B = A$$

$$(d) \quad A \cap B = B \cap A$$

$$(e) \quad A - B = B - A$$