# CSE311 Quiz Section: October 18, 2012

## 1 Problems 6,7 from homework.

## 2 More on sets.

Prove that $A \subseteq B \leftrightarrow \bar{B} \subseteq \bar{A}$.

## 3 Memories of functions.

For all functions and mappings below, state whether they are injective, surjective or both (bijective):

1. $f : A \to B$ , $f(x) = \frac{1}{x}$
2. $f : B \to C$ , $f(x) = x^2$
3. $f : B \to B$ , $f(x) = x^2$
4. $f : C \to B$ , $f(x) = x^2$

where:

1. $A = \{x | x \in \Re, x \geq 1\}$
2. $B = \{x | x \in \Re, 0 \leq x \leq 1\}$
3. $C = \{x | x \in \Re, -1 \leq x \leq 1\}$

## 4 Modular Arithmetic.

(24, Section 4.1, 7th edition) Find integer $a$ such that:

1. $a \equiv 43 \ (mod 23)$ , $-22 \leq a \leq 0$
2. $a \equiv 17 \ (mod 29)$ , $-14 \leq a \leq 14$
3. $a \equiv -11 \ (mod 21)$ , $90 \leq a \leq 110$