

## CSCI 281, Assignment 03 – Sets (20 points)

1. Let  $A = \{(2, 5), (-3, 1), (4, 2), (1, 1), (0, 1)\}$ . List the elements in each of the following sets (or write  $\emptyset$  if appropriate).
  - (a) (4 points)  $\{(a_1, a_2) \in A \mid a_1 < a_2\}$
  - (b) (3 points)  $\{a_1 \mid (a_1, a_2) \in A, a_1 > a_2\}$
  - (c) (3 points)  $\{a_2 \mid (a_1, a_2) \in A, a_2 = 0\}$
2. Let the universal set be  $U = \{x \in \mathbb{N} \mid x \leq 10\}$ , and let  $A = \{1, 2, 3, 4, 5\}$ ,  $B = \{5, 6, 7\}$ , and  $C = \{1, 6, 9\}$ . List the elements of
  - (a) (4 points)  $\overline{A} \cup C$
  - (b) (3 points)  $(B - C) - A$
  - (c) (3 points)  $(A \cap B) \times C$