

Discrete Structures (Section D)
Fall 2018
Assignment 1

Submission: on exactly ONE page, at the start of class on 18-9-18

Q1. Either prove that the following sets are equivalent, or show that they have a different Venn diagram!

$$(A \cup B) \cap (A \cup C) \cap (B \cup C) \text{ vs. } (A \cap B) \cup (A \cap C) \cup (B \cap C)$$

Q2. Translate the following sentences in to logical expressions using predicate calculus.

- a. Every dancer who is tall, will get selected for every competition
- b. Student who are taking calculus are not taking discrete structures.
- c. Some students who are taking calculus are not taking discrete structures.
- d. Ali is taking calculus but Ahmed is not.
- e. Exactly three flowers are red and small.

Q3. You go to an Island of Knights and Knaves. You meet 2 people.

A: If I am a knave, then so is B.

B: At least one of us is a Knight.

Who is a who?