

Your Name:

Duration of the Quiz is 20 minutes. There are four problems, worth 20 points. Show all your work for full credit. Books, notes etc. are prohibited. Calculators are NOT permitted.

1. Suppose that A is the set of sophomores at your school and B is the set of students in discrete mathematics at your school. Express each of these sets in terms of A and B .

(a) the set of sophomores taking discrete mathematics in your school

(b) the set of sophomores at your school who are not taking discrete mathematics

(c) the set of students at your school who either are sophomores or are taking discrete mathematics

(d) the set of students at your school who either are not sophomores or are not taking discrete mathematics

2. Let $A = \{a, b, c, d, e\}$ and $B = \{a, b, c, d, e, f, g, h\}$. Find

(a) $A \cap B$

(b) $A \cup B$

(c) $A \setminus B$

(d) $B \setminus A$

3. Let $A_i = \{\dots, -2, -1, 0, 1, 2, \dots, i\}$. Find $\bigcup_{i=1}^n A_i$ and $\bigcap_{i=1}^n A_i$

4. Find $\bigcup_{i=1}^{\infty} A_i$ and $\bigcap_{i=1}^{\infty} A_i$ if for every positive integer i , $A_i = \{-i, i\}$