

Quiz 1: October 4, 2018

Left Neighbor: \_\_\_\_\_

Right Neighbor: \_\_\_\_\_

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

Section TA: \_\_\_\_\_

This is a closed book quiz

1. (3 points) Suppose  $A_1 = \{a, b, d, e, g, f\}$ ,  $A_2 = \{a, b, c, d\}$ ,  $A_3 = \{b, d, a\}$ ,  $A_4 = \{a, b, h\}$ .  
What is  $\bigcup_{i=1}^4 A_i$ ? What is  $\bigcap_{i=1}^4 A_i$ ?

2. (3 points) Suppose sets  $A$  and  $B$  are in a universal set  $U$ . Draw Venn diagrams for  $\overline{A \cup B}$  and for  $\overline{A} \cap \overline{B}$ . Based on your drawings, do you think it's true that  $\overline{A \cup B} = \overline{A} \cap \overline{B}$ ?

3. (4 points) What is  $\mathcal{P}(\mathcal{P}(\{2\}))$