Mathematics 300

Quiz 4 Name: Key

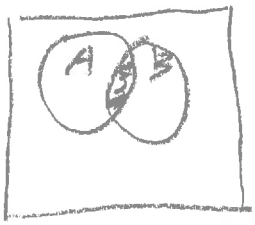
You must show your work to get full credit.

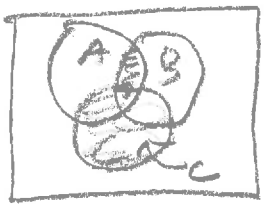
1. Let $A = \{1,2,3,4,5\}$, $B = \{3,4,5,6\}$ and let the universal set be $U = \{1,2,3,4,5,6\}$. Find the following

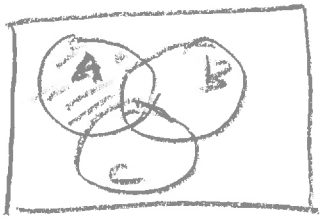
$A \cup B =$ $\{1,2,3,4,5,6\}$ $A \cap B =$ $\{3,4,5\}$

$\overline{A} =$ $\{6\}$ $A - B =$ $\{1,2\}$

2. Draw the Venn diagrams for the following

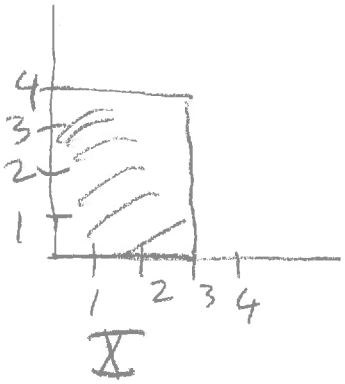


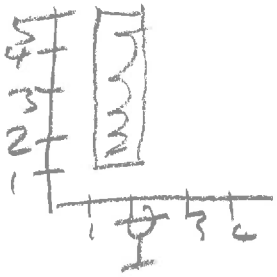


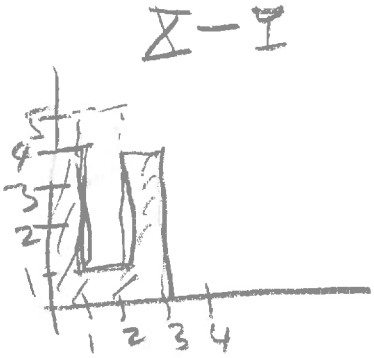


(a) $A \cap B$ (b) $(A \cap B) \cup C$ (c) $A \cap \overline{B \cup C}$

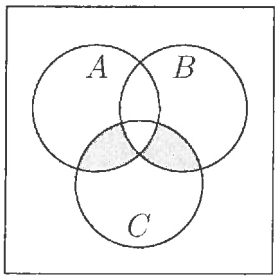
3. Let $X = [0,3] \times [0,4]$, $Y = [1,2] \times [1,5]$. Draw and shade the region $X - Y$.







4. Given an expression for the shaded region



The shaded regions is $(A \cap \overline{B} \cap C) \cup (\overline{A} \cap B \cap C)$

or $(A \cup B \cap C) - A \cap B$