

Mathematics 300

Quiz 28

Name: Key

You must show your work to get full credit.

Let the universal set be $U = \mathbb{Z}$, the integers and

$$A = \{1, 2, 3\}, \quad B = \{-2, -1, 0, 1\}, \quad C = \{-3, -1, 1, 3\}.$$

Give the following sets in roster notation:

$$A \cup B = \underline{\{-2, -1, 0, 1, 2, 3\}}$$

$$A \cap B = \underline{\{1\}}$$

$$B - C = \underline{\{-2, 0\}}$$

$$(B \cup C) - A = \underline{\{-3, -2, -1, 0\}}$$

$$A^c \cap (B \cup C) = \underline{\{-3, -2, -1, 0\}}$$

$$\begin{aligned} (B \cup C) - A &= \{-3, -2, -1, 0, 1, 3\} - \{1, 2, 3\} \\ &= \{-3, -2, -1, 0\} \end{aligned}$$

$$\begin{aligned} (B \cup C) - A &= (B \cup C) \cap A^c \\ &= A^c \cap (B \cup C) \end{aligned}$$