MATH 1113 – Mathematics for General Education
Quiz 5 – Ch 2.3

Instructions: Print out this page and turn it in at the beginning of class. Circle your final answers. Show all work. Answers with no work shown or illegible work will receive no credit.

1. Using two Venn diagrams, determine whether the following statement is a true statement.

$$A' \cap (B \cap C) = (A \cup B') \cap C$$

2. Recall DeMorgan's Laws for two sets $A$ and $B$:

$$(A \cup B)' = A' \cap B'$$
$$(A \cap B)' = A' \cup B'$$

The following may be called DeMorgan's Laws for three sets $A$, $B$, and $C$:

$$(A \cup B \cup C)' = A' \cap B' \cap C'$$
$$(A \cap B \cap C)' = A' \cup B' \cup C'$$

Use Venn diagrams to prove DeMorgan's Laws for three sets $A$, $B$, and $C$.