

# Venn diagram exercises for Homework 14

Dr Holmes

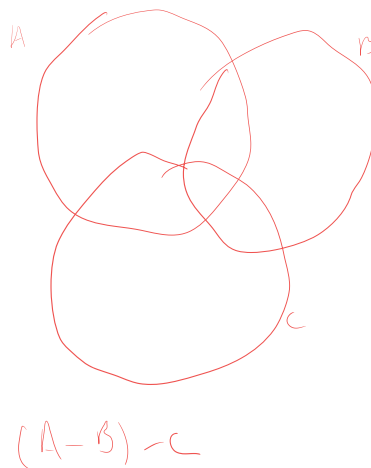
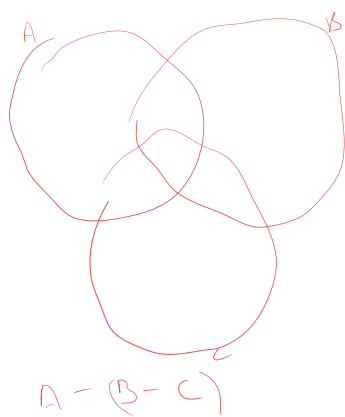
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One of the stated equations is an identity (a theorem) and one is not. Do Venn diagrams for each side of each equation, producing a demonstration of the one which is an identity. For the one which is not an identity, present actual sets  $A, B, C$  which are a counterexample and show computation of the two sides of the (failed) equation.

Your diagrams should be fully informative, with shadings to indicate how you got final answers for each computation, and final answers highlighted in the way I did in class.

1.

$$A - (B - C) = (A - B) - C$$



2.

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

