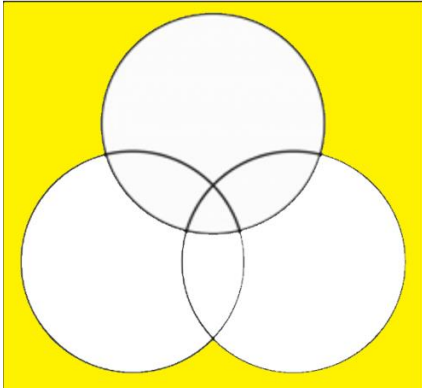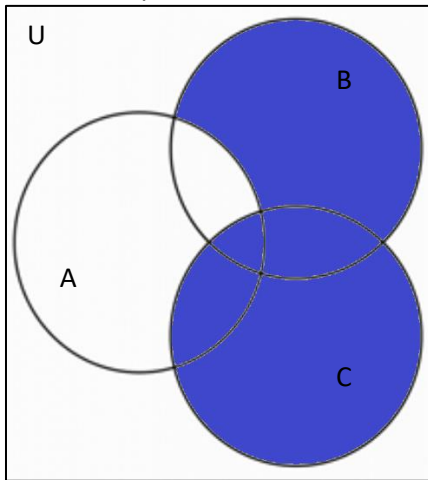**Instructions**: Show all work. Answers without work can only be graded all or nothing. Partial credit is available only when work is shown.

1. Shade the Venn diagram below to illustrate the set $(A' \cap B') - (C \cup B)$. Label your sets. If the shading is ambiguous, please indicate in words which portion of the shaded portion is meant to be the solution.

2. Write an expression for the shaded portion of the Venn diagram shown below.

$C \cup (B - A)$

3. Three hundred people were surveyed about their consumption of over-the-counter remedies: pain killers, stomach aids, and vitamins. The results showed the following:

   141 people took pain killers   134 people took vitamins
   120 people took stomach aids   55 people took both vitamins and stomach aids
   35 people took both pain killers & stomach aids 41 people took both pain killers and vitamins
   24 people took all three
   Draw a Venn diagram of the results to answer the following questions.
   a. How many people took none of these over-the-counter remedies? 12
   b. How many people took only vitamins? 62
   c. How many people never used pain killers? 300-141=62+31+54+12=159

12

Pain killers

89

17   11

24

62   31   54

Vitamins   Stomach aids