Do Now: Using Venn diagrams to organize situations Name:

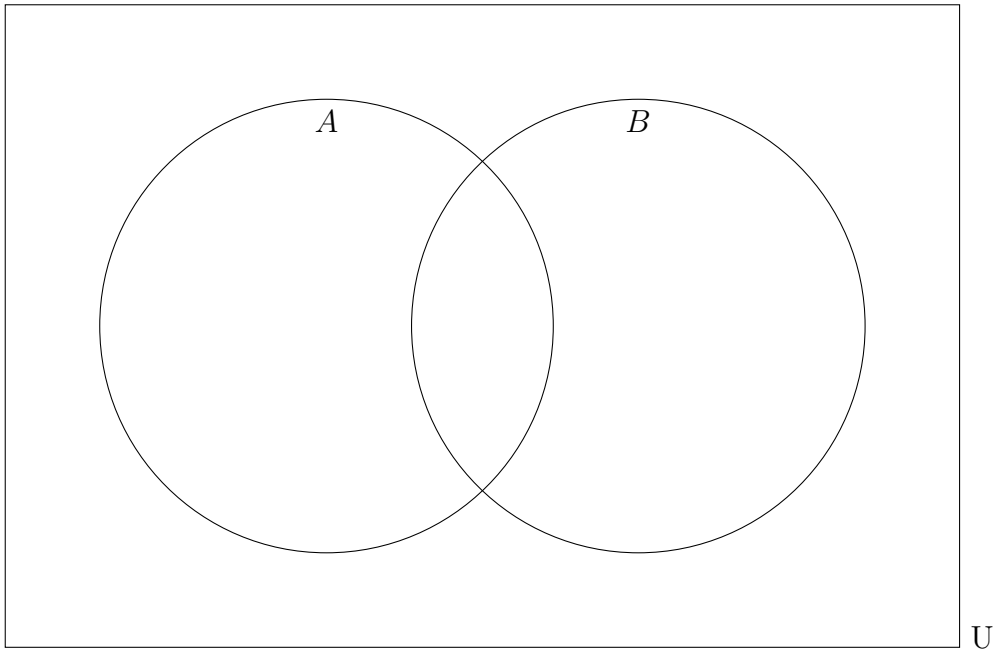
1. The universal set U is defined as the set of positive integers less than 15. The subsets A and B are defined as follows:
   $A = \{\text{the even numbers}\}$
   $B = \{\text{prime numbers}\}$

   (note: Prime numbers have only themselves and one as factors. One is not considered a prime.)

   (a) List the members of A

   (b) List the members of B

   (c) Place the elements of A and B in the appropriate regions in the Venn diagram below.



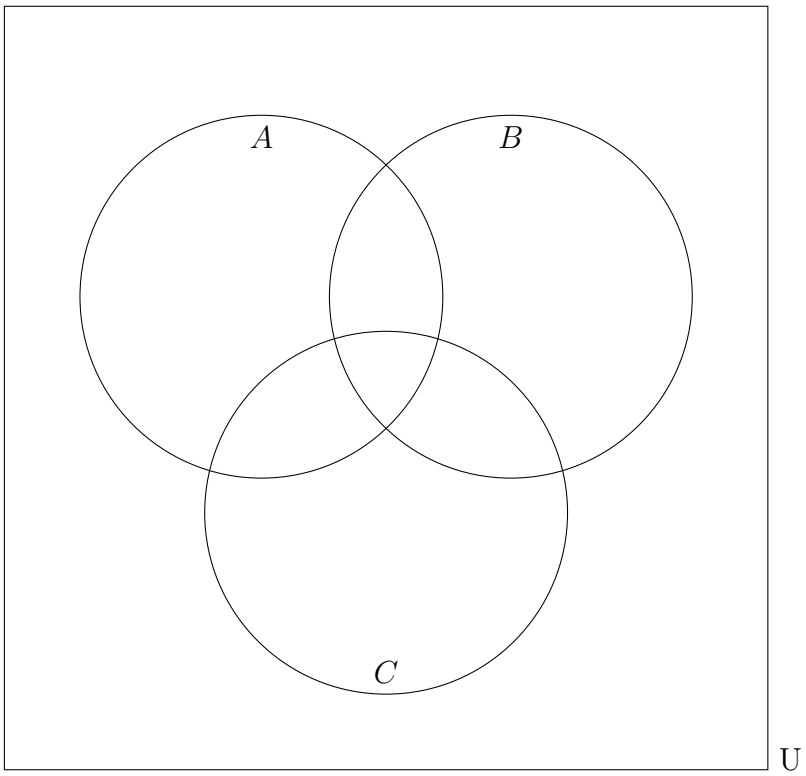
   (d) List the items in neither set A nor set B, $(A \cup B)'$

   (e) If an element is selected at random, what is the probability that it is a member of both sets, $(A \cap B)$?

2. There are 90 juniors at a school taking courses as follows:

   - 27 are taking Algebra
   - 35 are taking Botany
   - 51 are taking Chemistry
   - 11 are taking Algebra and Chemistry
   - 6 are taking Algebra and Botany
   - 13 are taking Botany and Chemistry
   - 4 are taking all three subjects

   Complete the Venn diagram below with the number of students in each region to represent the situation.



   How many juniors are taking none of the three courses?