NAME _____   SCORE: _____

1.   Use the Venn Diagram to answer the following: $\mathcal{U}$ = universal set
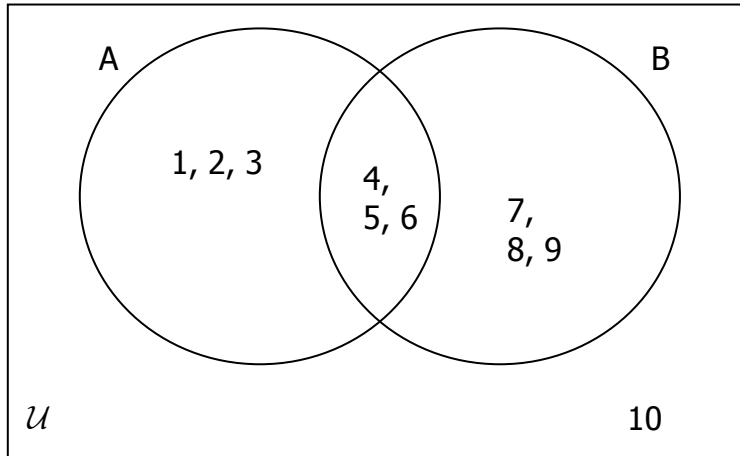
List the elements in each of the following sets.

A.   A   B.   B

C.   A ∩ B   D.   A ∪ B

E. $\mathcal{U}$ F.   A ∩ B'

2.   A survey of 600 school children found that 430 like pizza, 200 like hot dogs, and 150 like both pizza and hot dogs.

        A.   Draw a Venn diagram containing 2 circles that displays the given information.

        B.   How many children like pizza but not hot hogs?

        C.   How many children do not like either food?

Use permutation or combination counting techniques to answer the following questions. You must clearly give P or C and both n and r.

3.   An after school club has 40 members.

   A.   The club must choose the following officers: president, vice-president, secretary, and treasurer. How many ways can the club do this?

   B.   The club is holding a bake sale to raise money. They need six members to hold the bake sale. How many ways can the six students be selected?

4.   A two-month –old puppy is ready to be adopted from his foster home. The foster family has seven chew toys. They want to send two toys with the puppy to his new home. How many ways can they do this?

5.   Tessa found a great sale on handbags. She purchased ten different bags. She decides to give one as a gift to each of her four sisters. How many ways can do this?