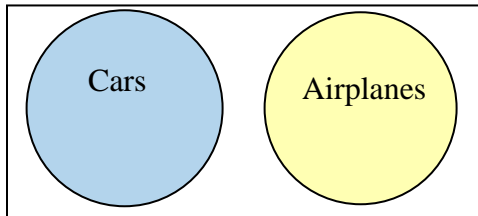**1.3 Describing and Critiquing Arguments - SOLUTIONS**

Group Activities

1. Draw a Venn diagram for each categorical proposition. Then write on the line whether the sets are disjoint, overlapping, or one is a subset of the other.

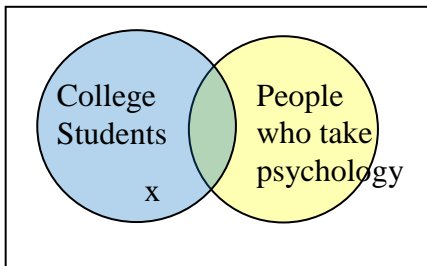   Relationship between the Sets

a. No cars are airplanes.   _____**Disjoint**_____

b. Some college students don't take psychology   _____**Overlapping**_____

2. Determine whether each argument is inductive or deductive.

  a. All cats have a keen sense of smell. Fluffy is a cat, so Fluffy has a keen sense of smell.
        This argument goes from general to specific so it is deductive.

  b. All brown dogs in the park are small dogs. Therefore, all small dogs are brown.
        This argument goes from specific to general so it is inductive.
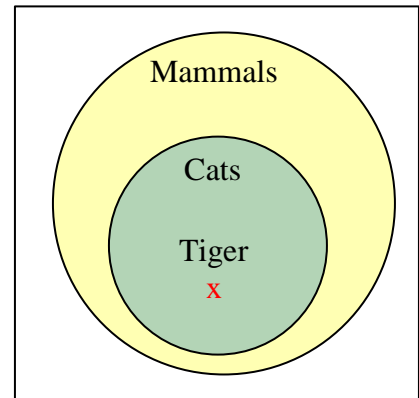
  c. My friends who are in college eat pizza. Pizza is affordable. Therefore, all college students
      eat pizza.
        This argument goes from specific to general so it is inductive.

3. Draw a Venn diagram for each deductive argument and determine whether it is valid and sound. (Problems adapted from David Lippman http://www.opentextbookstore.com/mathinsociety/index.html)

a.   Premise: All cats are mammals **(T)**
     Premise: A tiger is a cat **(T)**
     Conclusion: A tiger is a mammal **(T)**

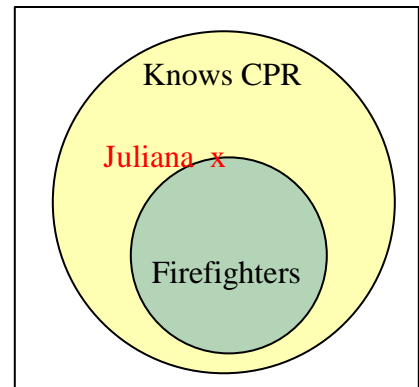   The conclusion is valid/invalid
     The conclusion is sound/not sound

b.   Premise: All firefighters know CPR
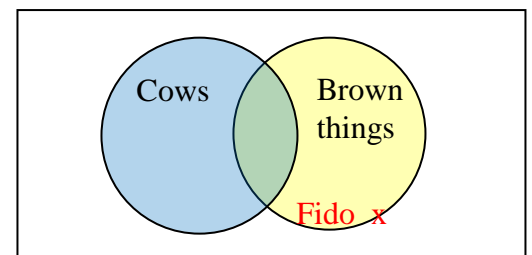   Premise: Juliana knows CPR
     Conclusion: Juliana is a firefighter

     The conclusion is valid/invalid
     The conclusion is sound/not sound

     The conclusion does not follow from the premises. It does not matter whether the premises are true or false, the argument is invalid and therefore it is not sound.

c.   Premise: Some cows are brown
     Premise: Fido is not a cow
     Conclusion: Fido is brown

     The conclusion is valid/invalid
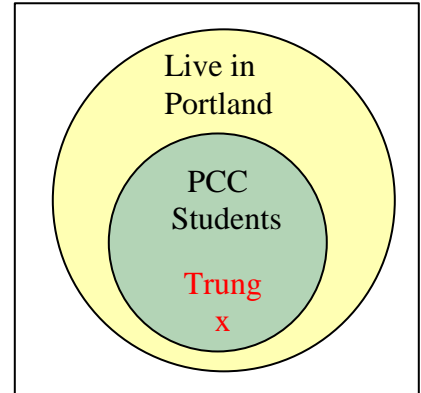   The conclusion is sound/not sound

     The conclusion does not follow from the premises, so the argument is invalid. Because it is invalid it cannot be sound.

d.   Premise: All PCC Students Live in Portland **(F)**
        Premise: Trung is a PCC Student **(T)**
        Conclusion: Trung lives in Portland **(Unknown)**

        The conclusion is ==valid==/invalid
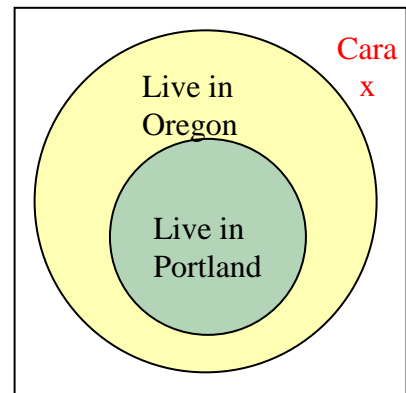   The conclusion is sound/==not sound==

        The conclusion follows from the premises so the argument is valid. The first premise is false, however, so the argument is not sound.

e.   Premise: If you live in Portland, you live in Oregon **(T)**
        Premise: Cara does not live in Oregon **(F)**
        Conclusion: Cara does not live in Portland **(F)**

        The conclusion is ==valid==/invalid
        The conclusion is sound/==not sound==

        The conclusion follows from the premises so the argument is valid. The second premise is false, however, so the argument is not sound.

Group Discussion

4. Share your ideas and examples on critical thinking from your reflections. Make a list of important elements of critical thinking: