Deductive Reasoning Practice

Determine whether you can make a valid conclusion from each set of statements. If so, write the conclusion. If not, write "no conclusion."

1. Statement 1: If you are at least 18 years old, then you can vote.
   Statement 2: You can vote.
   Conclusion: **no conclusion**

2. Statement 1: If it rains, then the field will be muddy.
   Statement 2: If the field is muddy, then the game will be cancelled.
   Conclusion: **If it rains, then the game will be cancelled.**

3. Statement 1: If two angles form a linear pair, then they are supplementary.
   Statement 2: \( \angle A \) and \( \angle B \) are supplementary.
   Conclusion: **no conclusion**

4. Statement 1: If two angles form a linear pair, then they are supplementary.
   Statement 2: If two angles are supplementary, then the sum of their measures is 180°.
   Conclusion: **If two angles form a linear pair, then the sum of their measures is 180°.**

5. Statement 1: If something is a Tupp, then it is a Yip.
   Statement 2: If something is a Yip, then it is a Quop.
   Conclusion: **If something is a Tupp, then it is a Quop.**

6. Statement 1: If something is a Tupp, then it is a Yip.
   Statement 2: If something is a Tupp, then it is a Gopp.
   Conclusion: **no conclusion**
7. Given the Venn diagram and the statement **Joe is a Pow.**, which of the following statements must be true [Circle all that are true.]
   
   - A. Joe is a Leb.  
   - B. Joe is a Wuff.  
   - C. If you are a Pow, then you are a Wuff.  
   - D. If you are a Wuff, then you are a Leb.  
   - E. If you are a Leb, then you are a Wuff.  
   - F. If Henry is not a Pow, then Henry is not a Wuff.  
   - G. If Lucy is not a Leb, then Lucy is not a Pow.  

   **Determine if the conclusion is valid or invalid.**

   8. Statement 1: If it is Tuesday, then Marla tutors Chemistry.  
      Statement 2: If Marla tutors Chemistry, then she arrives home at 4 p.m.  
      Conclusion: If Marla arrives home at 4 p.m., then it is Tuesday.  

      **Invalid**

   9. Statement 1: If a marine animal is starfish, then it lives in the intertidal zone of the ocean.  
      Statement 2: The intertidal zone is the least stable of the ocean zones.  
      Conclusion: If a marine animal is a starfish, then it lives in the least stable of the ocean zones.  

      **Valid**

   10. Statement 1: If a whole number is even, then its square is divisible by 4.  
      Statement 2: The number I am thinking of is an even whole number.  
      Conclusion: The square of the number I am thinking of is divisible by 4.  

      **Valid**

   11. Statement 1: If the football team wins its homecoming game, then Conrad will attend the school dance the following Friday.  
      Statement 2: Conrad attends the school dance on Friday.  
      Conclusion: The football team won the homecoming game.  

      **Invalid**