MGF 1106 – Section 3.6 – Euler Circles

Review from Set Theory - Draw Venn Diagrams to represent:

1. All A's are B's
2. Some A's are B's
   (or Some A's are not B's)
3. No A's are B's

In Logic, we use Euler circles (similar to Venn Diagrams) to determine if a collections of statements makes a valid conclusion or is a fallacy. Draw Euler circles for the following and determine if the statements represent a valid conclusion or a fallacy.

4. All children like to play.
   All girls are children.
   ∴ All girls like to play.

5. All fragile things are breakable.
   Some mirrors are fragile.
   ∴ Some mirrors are breakable.

6. All fragile things are breakable.
   Some mirrors are breakable.
   ∴ Some mirrors are fragile.

7. All zebras have stripes.
   No zebras are polar bears.
   ∴ No polar bears have stripes.

8. All gold is expensive.
   Some rings are gold.
   ∴ Some rings are expensive.

9. All gold is expensive.
   Some rings are gold.
   ∴ All rings are expensive.

10. All taffy is sticky.
    Some sticky things are yucky.
    ∴ Some taffy is yucky.
Draw Euler Circles for the following premises. Use the circles to determine a valid conclusion **if possible.**

11. All frogs are green. 
   Kermit is a frog. 
   \[\therefore\]

12. All physicists are intelligent. 
   Madame Curie was intelligent. 
   \[\therefore\]

13. No candy is sweet. 
   All Tootsie Rolls are sweet. 
   \[\therefore\]

14. Some swans are not graceful swimmers. 
   Candy is a swan. 
   \[\therefore\]

15. All grass is green. 
   All things that are green will grow. 
   \[\therefore\]

16. All trees are living things. 
   Marty is a living thing. 
   \[\therefore\]

17. Some tall people wear glasses. 
   Maria wears glasses. 
   \[\therefore\]

18. All squares are rectangles. 
   All rectangles are quadrilaterals. 
   All quadrilateral are polygons. 
   \[\therefore\]

**HW:** Section 3.6 Problems 7 – 27 odd (041)