Practice Quiz

Read each question carefully. Use highlighters and/or colored pencils if you find it helpful. Pay attention to whether you have answered the question.

Make a conjecture about the next item in the sequence.

1. $180^\circ, 360^\circ, 540^\circ, 720^\circ, \ldots$  
2. $1, 1, 2, 3, 5, 8, \ldots$

Make a conjecture based on the given information. Draw a figure to illustrate your conjecture.

3. $\angle 1$ and $\angle 2$ form a linear pair.  
4. $Q$ is the midpoint of $\overline{BF}$

Determine whether each conjecture is true or false. Give a counterexample for any false conjecture.

5. **Given:** $F$ is between $G$ and $H$  
   **Conjecture:** $\overline{FG} \cong \overline{FH}$

6. **Given:** $\angle 1$ and $\angle 2$ are vertical angles  
   **Conjecture:** $\angle 1 \cong \angle 2$

Write each statement in if-then form.

7. Every butterfly was once a moth.

8. No mediaperson is allowed past security.
Write the hypothesis and conclusion of each of the following statements. Then determine the truth value.

9. **If you own a car, then you are a good driver.**
   
   Hypothesis: ____________________________
   
   Conclusion: ____________________________
   
   Truth Value: _________

10. **Parallel lines never intersect.**
    
    Hypothesis: ____________________________
    
    Conclusion: ____________________________
    
    Truth Value: _________

11. Which of the following is the **converse** of the following statement? (Circle one)
    
    **All Goops wear hats.**
    
    A. If you are a Goop, then you wear a hat.
    
    B. If you are not a Goop, then you do not wear a hat.
    
    C. If you do not wear a hat, then you are not a Goop.
    
    D. If you wear a hat, then you are a Goop.

12. Write the contrapositive of the following statement.
    
    **If a number is not even, then its square is odd.**
    
    What is the truth value of the original statement?
13. Given the biconditional statement, write the two related conditional statements.

Segments are congruent if and only if they have equal lengths.

14. Write a conditional statement to represent the Venn diagram.

Given that the each set of statements is true, write a valid conclusion. If no valid conclusion can be made, write no valid conclusion.

15. Statement 1: If a polygon has five sides, then it is a pentagon.
   Statement 2: Polygon ABCD has five sides.
   Conclusion:

16. Statement 1: If you get an A on the test, you get a sticker.
   Statement 2: If you get a sticker, then you get a piece of candy at lunch.
   Conclusion:

17. Given the following statement, match the related conditional statements with the correct term.
   
   If a polygon is regular, then it is convex.

   A. If a polygon is convex, then it is regular.
   B. If a polygon is concave, then it is irregular.
   C. If a polygon is regular, then it is convex.
   D. If a polygon is irregular, then it is concave.

   Converse: _______ Inverse: _______ Contrapositive: _______