Conditional Statements Practice

First, write the conditional statement in if-then form. Then, determine the hypothesis and conclusion of each conditional statement.

1. If it is Saturday, there is no school.
   If-then form:
   Hypothesis:
   Conclusion:

2. Pass in your test if you are finished.
   If-then form:
   Hypothesis:
   Conclusion:

3. No one in this class likes backgammon.
   If-then form:
   Hypothesis:
   Conclusion:

4. Every square is a rectangle.
   If-then form:
   Hypothesis:
   Conclusion:
**Related Conditional Statements:** Every conditional statement involves two scenarios (hypothesis and conclusion). Switching and/or negating these scenarios creates three related conditional statements (converse, inverse, and contrapositive).

<table>
<thead>
<tr>
<th>Ex.</th>
<th>Original Statement</th>
<th>Converse:</th>
<th>Inverse:</th>
<th>Contrapositive:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If a being is a monkey, then it loves bananas.</td>
<td>If a being loves bananas, then it is a monkey.</td>
<td>If a being is not a monkey, then it does not love bananas.</td>
<td>If a being does not love bananas, then it is not a monkey.</td>
</tr>
</tbody>
</table>

Practice: Write the **converse**, **inverse**, and **contrapositive** of each conditional statement. Then determine (using your own knowledge of the world) whether each statement is **true** or **false**.

5. If a person lives in Salem, NH, then they live in the USA.
   - **Converse:**
   - **Inverse:**
   - **Contrapositive:**

6. If an angle is right, then its measure is 90°.
   - **Converse:**
   - **Inverse:**
   - **Contrapositive:**

7. If a polygon is regular, then its sides are congruent.
   - **Converse:**
   - **Inverse:**
   - **Contrapositive:**

A biconditional statement is one in which **ALL** of its related conditional statements are true.

8. Are any of the above statements **biconditional statements**? Rewrite it in **iff form**.

9. Write your own biconditional statement about any topic.