2.2b - Conditional Statements

1) Test Retake Reminder
2) Recaping Hypothesis and Conclusion
3) Notes 2.2b : Conditional Statments
4) Examples
5) Assignment Time

For retaking the Unit 1 Test...

-you may only retake the test once

-must be retaken by October 13

-only before or after school (please let me know)

-if you earned below a 63%, you may retake and earn up to a 70%

-if you earned above a 63%, you may retake and earn up to an 80%
2.2 - Finding the Truth

**Conditional Statement**
- a statement that can be written in "if-then" form
- with logic symbols is written as $p \rightarrow q$

**Hypothesis**
- "the IF part of the statement"
- represented by $p$

**Conclusion**
- "the THEN part of the statement"
- represented by $q$

**Negation**
- the opposite of a condition
- represented by $\sim p$ "not"

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**Example #1**
Identify the hypothesis and conclusion of each conditional

a) If today is Thanksgiving Day, then today is Thursday

b) An obtuse triangle has exactly one obtuse angle
   [write in If-Then from first]
### 2.2 - Related Conditionals

<table>
<thead>
<tr>
<th>Definitions</th>
<th>Logic Symbols</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conditional</strong></td>
<td>p --&gt; q</td>
<td>If you are a student in this room, then you are in Geometry</td>
</tr>
<tr>
<td><strong>Converse</strong></td>
<td>q --&gt; p</td>
<td>If you are a student in Geometry, then you are in this room</td>
</tr>
<tr>
<td><strong>Inverse</strong></td>
<td>~ p --&gt; ~ q</td>
<td>If you are not a student in this room, then you are not in Geometry</td>
</tr>
<tr>
<td><strong>Contrapositive</strong></td>
<td>~ q --&gt; ~ p</td>
<td>If you are not a student in Geometry, then you are not in this room</td>
</tr>
</tbody>
</table>

### Example #3

Write the converse, inverse, and contrapositive of the conditional statement. Tell whether each statement is true or false.  
{hint: write in "If-Then" form first}

**Monday of Homecoming, I wear pajamas**

- **Original**: If the day is Monday of Homecoming, then I wear pajamas  
  - T
- **Converse**: If I wear pajamas, then the day is Monday of Homecoming  
  - F
- **Inverse**: If the day is not Monday of Homecoming, then I do not wear pajamas  
  - F
- **Contrapositive**: If I do not wear pajamas, then the day is not the Monday of Homecoming  
  - T
2.2 - Finding the Truth

**Logically Equivalent Statements**
- related statements that have the same truth value

**Example #3**
- which of the previous statements are logically equivalent?

*If a cat is a bird*

*then today is Friday*

**Assignment (Due Tuesday, 9/30)**

1) Read over other examples on pg. 81-82

2) Problems: Pg. 84, #13-36, 38-40, 50-53

3) Are you going to retake test?

4) PB & J Directions
   [5 minutes - by Thursday]