You will be asked to do Problems 1 and 3 below (and think about Problem 2), after the words “THIS IS NOT CORRECT”.

Is “or” ambiguous? See discussion below.

As stated in class and in the textbook, when we use “or” in this course, we are always referring to the “inclusive or”. The notation we use for “or” when dealing with statements is \( \lor \). The definition is as follows:

Suppose \( p \) and \( q \) are statements.

Then the statement \( p \lor q \) is true in the following cases:
- \( p \) is true and \( q \) is true;
- \( p \) is true and \( q \) is false;
- \( p \) is false and \( q \) is true.

When \( p \) is false and \( q \) is false, the statement \( p \lor q \) is false.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>( p \lor q )</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>T</td>
<td>F</td>
<td>T</td>
</tr>
<tr>
<td>F</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>F</td>
<td>F</td>
<td>F</td>
</tr>
</tbody>
</table>

Suppose Chris, Robin, and the word “tall” are as described in Problem 2 of Lesson 1. Note that under these assumptions, there is nothing ambiguous about saying “Chris is tall”.

Some students will argue that a statement (disjunction) such as

\[(A) \quad \text{Chris is tall or Robin is tall}\]

is ambiguous, because it might mean

\[(B) \quad \text{Chris is not tall and Robin is tall; or,} \]
\[(C) \quad \text{Chris is tall and Robin is not tall; or,} \]
\[(D) \quad \text{Chris is tall and Robin is tall.} \]

So, some students say, the statement “Chris is tall or Robin is tall” has three meanings, and therefore it is ambiguous.

**THIS IS NOT CORRECT.**

1. **Explain** carefully and clearly why the statement \( (A) \) “Chris is tall or Robin is tall” does not mean the same as the statement \( (C) \) “Chris is tall and Robin is not tall”.
   Optional hint: You may wish to consider the circumstances under which each statement might be true.

2. Similarly, the statement \( (A) \) does not mean the same as the statement \( (B) \) or the statement \( (D) \).
   (This is a READing problem. Nothing for you to do here except READ. Just note this fact.)

3. **Discuss** whether the statement “Chris is tall or Robin is tall” is ambiguous.
   (Reminder: “Chris is tall” is NOT ambiguous.)