WRITE YOUR ANSWERS TO THESE PROBLEMS BELOW ON YOUR PAPER, not on this paper

See very important Comments below solution.

6. Consider four students named Pat0, Pat1, Robin0, and Robin1.
   Pat0 and Robin0 are taking Math 300.
   Pat1 and Robin1 are taking Math 301.

The syllabi for these courses contain the following rules:
   In order to pass Math 300, a student must have a score of at least 50% on the Final Exam.
   A student passes Math 301 if the student has a semester average in the course of at least 60%.

The following table shows some relevant scores for the Pats and Robins in the courses.
In each case, decide whether the given information implies that the student Passes (P) or Fails (F) (i.e.,
doesn’t pass) or whether there is Not Enough Information (?) to tell.

**Explanation Optional:** correct answers will receive full credit without explanation.

<table>
<thead>
<tr>
<th></th>
<th>Math 300</th>
<th></th>
<th>Math 301</th>
<th></th>
<th>Pass (P), Fail (F), or don't know (?)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Final</td>
<td>Exam score</td>
<td>Semester</td>
<td>Ave</td>
<td></td>
</tr>
<tr>
<td>Pat0 on Final</td>
<td>55%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robin0 on final</td>
<td>46%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pat1 in course</td>
<td></td>
<td>65%</td>
<td></td>
<td></td>
<td>P</td>
</tr>
<tr>
<td>Robin1 in course</td>
<td></td>
<td>46%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COMMENTS on, and explanations of, the two simplest cases.**

Consider Robin0 in Math 300, whose scores 46% on the Final Exam. The relevant rule says
In order to pass Math 300, a student must have a score of at least 50% on the Final Exam.
Since Robin0 scored only 46% on the Final Exam, it is a simple, logical, legal consequence of this that
Robin0 **fails the course.**

Consider Pat1 in Math 301, who averages 65% in the course. The relevant rule says
A student passes Math 301 if the student has a semester average in the course of at least 60%.
Since Pat1 averaged 65% in the course, it is a simple, logical, legal consequence of this that
Pat1 **passes the course.**

This is not “Math 323” thinking; these are just simple, common-sense consequences of the given rules.

The relevance of this to Math 323 is that many students assume, incorrectly, that the converses of these rules are implied by the rules (consider the fate of Robin0 and Pat 1).

By the way, the rule in Math 323 this summer is exactly analogous to the rule in Math 301 on the exam.