Score:_____   Name:_____
ECE 3055 Quiz - April 15, 2009
There are a total of 3A, 12 B, 13 C, and 13D resources in a system. Compute need and available when the following states are in effect (assume this initial state is safe):

Process	Allocation ABCD	Max ABCD	Need ABCD	Available ABCD
P0	1 0 0 0	1 3 5 1	0 3 5 1	1 1 2 7
P1	0 6 3 2	2 6 5 2	2 0 2 0	
P2	0 0 1 0	0 3 1 0	0 3 0 0	
P3	0 2 2 0	0 3 2 0	0 1 0 0	
P4	1 3 5 4	3 4 5 6	2 1 0 2	

Next, process P1 issues a request for (1,0,2,0). Can the request be granted? __N__ Y or N
Justify your answer by showing your work below and show a safe execution sequence, if one exists. Prove it, if one does not exist. Scan through processes in strict sequential order (i.e. low to high and then back to low) when searching for a safe sequence. No credit for answer without showing a safe sequence, or showing that no safe sequence exists along with which processes can finish and which processes face possible deadlock waiting for resources help by another process.

Process	Allocation ABCD	Max ABCD	Need ABCD	Available ABCD
P0	1 0 0 0	1 3 5 1	0 3 5 1	0 1 0 7
P1	1 6 5 2	2 6 5 2	1 0 0 0	
P2	0 0 1 0	0 3 1 0	0 3 0 0	
P3	0 2 2 0	0 3 2 0	0 1 0 0	
P4	1 3 5 4	3 4 5 6	2 1 0 2	

$$
\begin{array}{r}
0\ 1\ 0\ 7 \\
P3\ 0\ 2\ 2\ 0 \\
\hline
0\ 3\ 2\ 7 \\
P2\ 0\ 0\ 1\ 0 \\
\hline
0\ 3\ 3\ 7
\end{array}
$$

P3, P2 Finish, but
P0, P1, P4
con deadlock
waiting on resurces