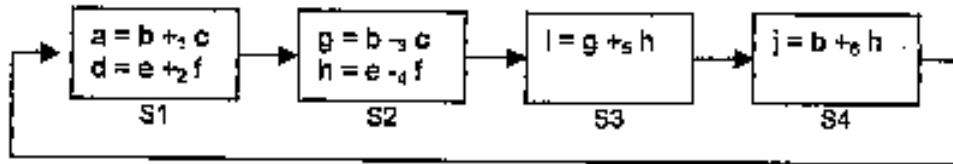


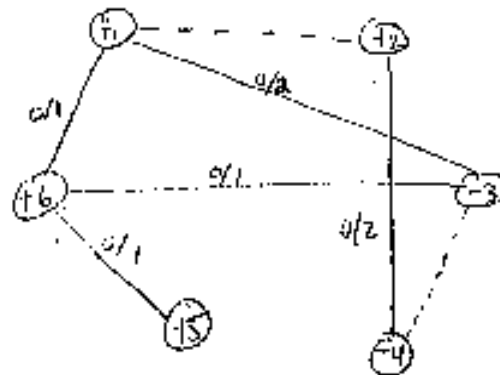
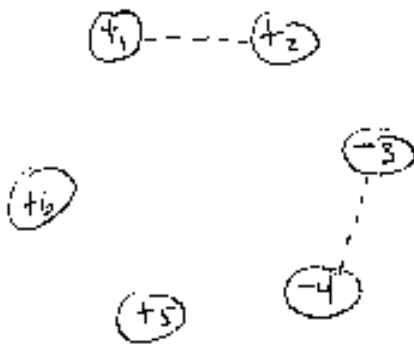
5) (8 points) Functional unit merging.

- a) Given the following ASM, derive a compatibility graph for the operations, assuming an ALU exists in our library that can implement every operation. Do this in two steps. First, draw the graph with only incompatibility edges shown. Second, redraw this graph, and then add compatibility edges with a non-zero weight (don't draw the edges that have 0 weight, thus following the same convention as the book). Every operation has been assigned a unique number, shown as a subscript next to the operation.



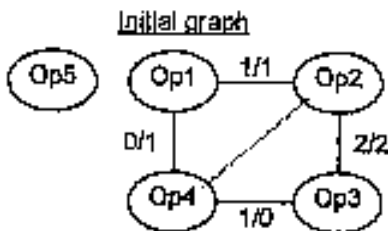
Compatibility graph with incompatibility edges only

Compatibility graph with incompatibility edges and non-zero weighted compatibility edges

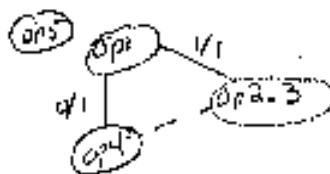


0/1
or
1/0 ok

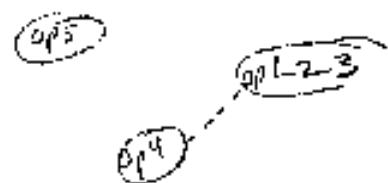
- b) For the following compatibility graph (unrelated to the above problem), show the new graph after every merge, until we have a final grouping of operations. Only incompatibility edges, and compatibility edges with non-zero weight, are shown. Compatibility edges with zero weight are not shown. There may be fewer merges than shown.



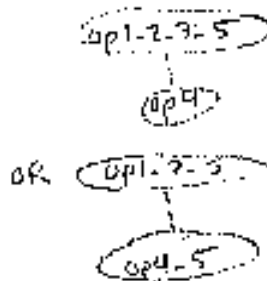
Graph after merge 1



Graph after merge 2



Graph after merge 3



Graph after merge 4

