Extra Credit 2:

Belady's anomaly states that the number of page faults are directly proportional to as the number of page frames, i.e. as the number of page frames increase, the number of page faults also increase.

In stack based algorithms, the set of pages in memory for n frames will always be a subset of the set of pages in memory for n+1 frames. As a result, if the number of frames increase from n to n+1, the pages in memory for N frames will still be the most recently referenced, Thus, the pages in memory for n frames, M(n), is a subset of the pages in memory for n+1 frames, M(n+1) :

M(n) ⊆ M(n+1)

This results in either a constant or decreased number of page faults, hence proving that Belady’s anomaly cannot occur in a stack algorithm.