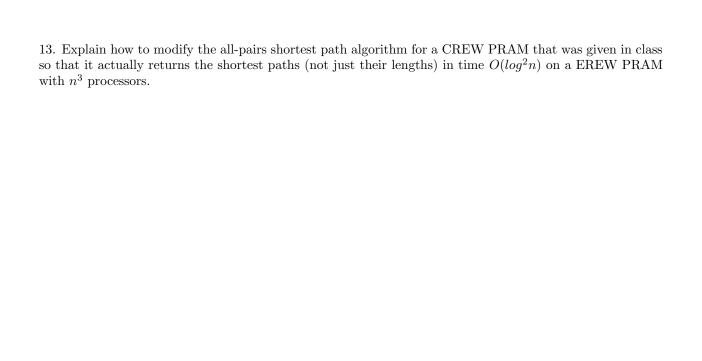
12. Explain how to modify the all-pairs shortest path algorithm for a CREW PRAM that was given in class so that it runs in time $O(log^2n)$ on a EREW PRAM with n^3 processors.

We need to first create n copies of the input using the algorithm described in 3a. This requires n^3 to do this copying process in log n time. The processor requirement is n^3 since we need to iterate over all pairs of nodes (n^2 processors) and then perform the actual copy of the edge from the first to the second node using n processors.



14. Explain how to solve the longest common subsequence problem in time $O(log^2n)$ using at most a polynomial number of processors on a CREW PRAM.

HINT: One way to do this is to reduce the longest common subsequence problem to a shortest path problem. Note that the shortest path algorithm works for any graph for which there are not cycles whose aggregate weight is negative.

	4	

16. Design a parallel algorithms that merges two sorted arrays into one sorted array in time O(1) using a polynomial number of processors on a CRCW PRAM.