— Problem 2.2 —

According to my prediction, quick-sort will be more efficient in this case. That is because the unsorted array only consists of randomly generated 0’s and 1’s, and therefore, the pivot will be either 0 or 1 and also roughly 50% of the array will be either 0 or 1. The array will be sorted after just one recursive call, i.e, either recursion of integers less than the pivot or recursion of integers greater than the pivot. On the other hand, in merge-sort, with each recursion the 32 bit array will be divided into half until each array is 2 bits in length. So, the the number of comparisons will be less in quick-sort than in marge-sort.