

# 6.0002 – Problem Set 1

## A.5 – Writeup

1.

My greedy algorithm ran in 0.0 seconds (below the timing threshold) and required 6 trips, while my brute force algorithm ran in approximately 1.1 seconds and only required 5 trips. The greedy algorithm is faster because it doesn't have to take the time to check every possible solution in the problem space.

2.

The greedy algorithm does NOT return the optimal solution, because it doesn't check all possible solutions and never backtracks. This means it may return a locally optimal solution instead of a globally optimal one.

3.

The brute force algorithm does return the optimal solution, albeit slowly (especially as the input grows), because it considers ALL possible solutions and chooses the best one (i.e., the one that requires the minimum number of trips).