MIT 6.0002 Problem Set 1 Write Up

- What were your results from compare_cows_transport_algorithms? Which algorithm runs faster? Why?
    - When both algorithms were executed, the brute force returned with a solution with fewer trips but took longer to compute. The greedy algorithm returned a solution with one extra trip but computed the results in significantly less time. The greedy algorithm converged on the 1st valid case, using an ordered set to select from. The brute force algorithm evaluated all combinations and then selected the 1st trip that didn't exceed weight restrictions but had the lower number of trips.

- Does the greedy algorithm return the optimal solution? Why or why not?
    - The greedy algorithm selects the 1st local maximum (or minimum) without evaluating global data characteristics.

- Does the brute force algorithm return the optimal solution? Why or why not?
    - The brute force algorithm returns the optimal solution because it evaluates all data characteristics but at the cost of computational duration. The lowest or highest solution is always determined as it evaluates all solutions but at the cost of compute time.