Problem Set 3a: Space Cows
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Time: 20min

1:
The greedy algorithm reported that it took no time to run the program, with 6 total trips. The brute force algorithm reported that it took around 5 seconds to run the program, with 5 total trips.

The greedy algorithm runs significantly faster because it doesn't have to generate and process a list of every possible trip combination.

2:
No, the greedy solution doesn't return the optimal solution. The greedy algorithm makes decisions based on a metric that isn't always optimal.

3:
The brute force algorithm does return the optimal solution because it takes the time to find the best of every possible solution.

4:
Both the greedy and the brute force algorithms would return optimal solutions in this situation. Because you are now able to fill the ships to the brim with exactly as much cow as they can carry, there wouldn't be a difference in how efficient either option was.