**Homework 3: trading**
CS 4102
Jared Hawkins
jmh7ax
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1. Brute force
    a. x (500)
        i. 11905 microseconds
    b. 2x(1000)
        i. 32711 microseconds
    c. 3x(1500)
        i. 67695 microseconds
    d. Explain:
        i. The ratios of these times to the input size roughly match those expected of an $n^2$ runtime. This is expected for the brute force solution, as it checks every point once, for each point. $O(n^2)$.
2. Divide and conquer
    a. x(500)
        i. 643 microseconds
    b. 2x(1000)
        i. 1329 microseconds
    c. 3x(1500)
        i. 1927 microseconds
    d. Explain: These runtimes are much faster than the brute force run times, yet they yield the same results. This is expected. The ratio of the times to input sizes also more closely matches that of a linear runtime than an $n^2$ runtime. This is expected, as the divide and conquer method is expected to be nlog(n) runtime. $o(n^2)$.