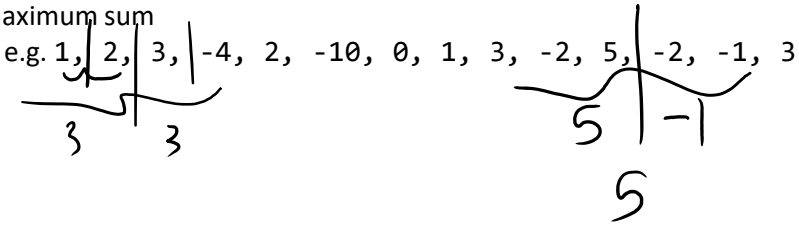
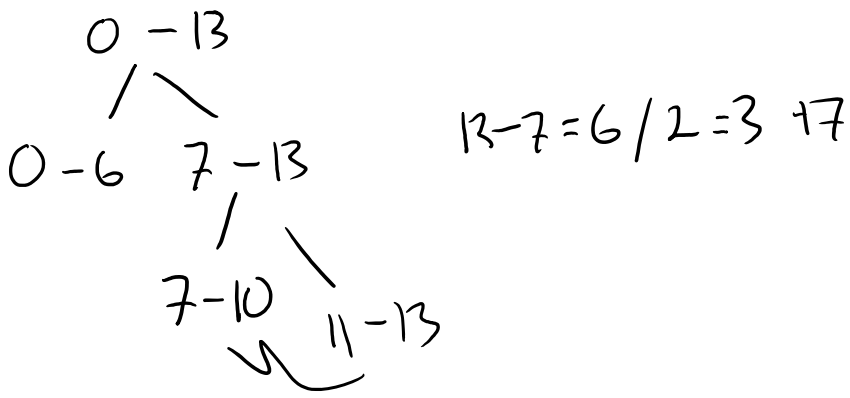
2019-05-01 Maximum Subsequence Problem

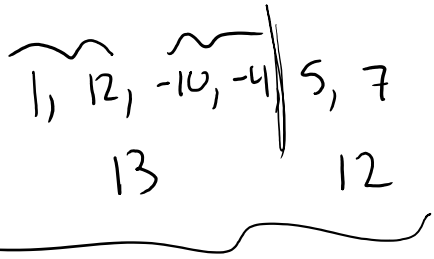
Wednesday, May 1, 2019 3:04 PM

Maximum Subsequence Problem

- Given a series of positive and negative integers, find the subsequence that yields the maximum sum
  - e.g. 1, 2, 3, -4, 2, -10, 0, 1, 3, -2, 5, -2, -1, 3





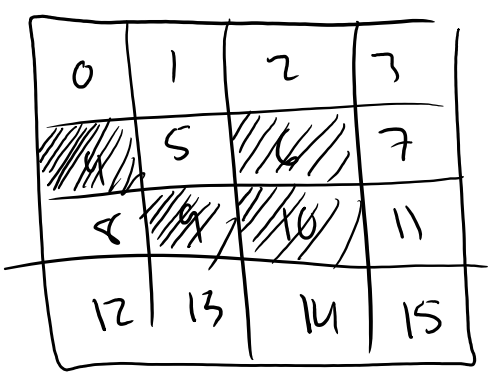


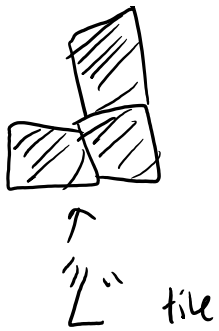
$2T(n/2) + n$

$n^{\log_b a} = n$ $n \log n$

Tiling Problem

- Given some n x n grid with n being a power of 2 and one element filled in (rest are open)
- We're allowed to place "L" shaped tiles
- How to place the tiles such that the grid is completely filled in





- Could be solved w/ dynamic programming, but better solution w/ divide and conquer
- Base case:
    - 2x2 grid. Because a single L tile can fill in the grid