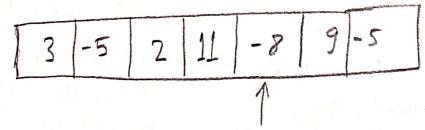
$$Q_{1}: \text{ Basic operation} = \text{ compariny 2 elembs.} \qquad \qquad \begin{array}{l} Q_{2an} \text{ A-31t} \\ Q_{3al} \text{ Consider} \\ Q_{1}: Q_{2an} \text{ A-31t} \\ Q_{2an} \text{ A-31t} \\ Q_{3al} \text{ Consider} \\ Q_{1}: Q_{1}:$$

In homework 3 the complexity equals  $O(n^2)$  because in that algorithm we have 2 for loop (one is Inside of other are).

On the other hand that algorithm calculates same values more than one time but dynamic programming does not allows that. B

Brute force algorithm calculates all possibilities but dynamic programming algorithm calculating like:



For example in here

algorithm compares current and maximum value 12-8, 13>5=> c-rent value equals 5 but maximum does not changes.

after that algorithm wents 9 and current goes
9+5=14 and compares 13 and 14 14 14 13 so newin-m
equals 14.

$$Q_{2}$$
: Basic operation = + (sum)
$$\sum_{i=1}^{n} \frac{1}{2} = \sum_{i=1}^{n} \frac{2+2+...+2}{1+i-n} = \sum_{i=1}^{n} \frac{2+i}{1+i-n}$$

$$= \sum_{i=1}^{n} i = 1 + 2 + \dots + n = \frac{n \cdot (n+1)}{2} = \frac{n^2 + n}{2} = O(n^2)$$

Because of dynamic programing instead of calculating all values algorithm calculates maximum profit of every emfor one time.

maxVal atirary holds the maximum price of every length, i and oncoloration new maximum value adds an individual value and any maximum value for test new maximum value. In inner for its tatement looks for maxValue [i+j-1] + arr [t]. i+t-1+t= i-1

So it means that adding maximum values to every individual costs for tirding the best. (be cause of i+t-1+t= i-1) every new values length equals the wanted length.)

Qz: For basicpoperation = 1+ (sun)1, soil O(nom)1

$$\sum_{i=0}^{n} 2 = 2 + 2t \cdot -2 = 2 n \approx O(n)$$
But I-reval. sort out sortion of  $u_i$ 

ButI-eval. sort and sorting algorithm of pathon equals

O(n.10g(n)) so time complexity of algorithm = O(n.10g(n))

In greeds algorithm I calculate the value of every to of cheeses. Because greads algorithm sous put most include thing at list than second, think.

I get most enturble things and alwell the lefted search for cutting and filling of they

Q4: Basic operation = lessons, appard

$$\sum_{i=0}^{\infty} 1 = \underbrace{1 + 1 + \dots + 1}_{n + i \text{ res}} = \lambda n \approx O(n)$$

But les sunt takes O(nologue) times.

In that algorithm I searched first hiristed lesson and any lesson that state after that and finisher first. arms was sorted for that with their finishing time.