desgrat (lo, hi, target):

mid = (lo+hi) = bim if (Jumple + mid + mid, fo) == target):

(E, bim) bound (mid the) (typerat (bim & bim) (i) T(2) - return (desgrt (le, mid-1, Tayet)) (tagent, id, Ethinn I trepad I muder o-13)T $T(m) = T(\frac{m}{2}) + C$ Pelo Toruma Mestre: mlog21 = m=1 Mm = C = mlog20 = 1 (difere pon K) dratures (1) = (20 color) = (n) T(m)=0 (m/92 /g(m))=0 (/g(m)) 1

2) A)
$$1+2+3+\cdots+m=\frac{m-m+d}{2}$$

P(1): $1=\frac{1\cdot(1+1)}{2}=1$

P(K): worded $2=\frac{1}{2}=\frac{1}{2}$

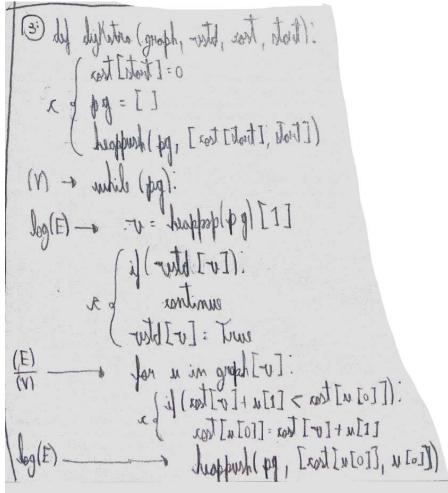
P(K+1): $\frac{1}{2}=$

(2-) B) 12+22+32+...+ m2= m.(-m+1).(2-m+1) P(n): $1 = \frac{1.(1+1).(2.1+1)}{6} = \frac{6}{6} = 1$ P(K): Irwe => \(\sum_{12} = \frac{K.(K+1)(2N+1)}{6} P(K+1): \(\frac{k}{2} + (K+1)^2 \frac{2}{6} \) K.(K+1)(2K+1)+ (K2+2K+1)=2K3+3K2+1++ (K2+2K+1) = 2K3+9K2+12K+6 * $(K+1).(K+2).(2K+3) = (K^2+3K+2).(2K+3) =$ 2K3+9K2+13K+6=+ D) 1+3+5+ + (2m-1)= m2 P(1): 1 = 1211 P(K): 1+3+ ... + (2K-1) = K2 Jun P(K+1): 1+3+...+(2K-1)+(2K+1):(K+1) K2+(2K+1)=K2+2K+1=(K+1)2 (2) E) $1^3 + 2^3 + \dots + m^3 = \frac{m^2(m+1)^2}{n}$ P(1), 13 = 12(1+1)2 = 1 P(K): \(\sum_{i3} = \frac{k^2(K+1)^2}{4} \tag{True} b(k+1): = 3 + (k+1) = (k+1) (k+5) 18 * K3(K+1)2+ (K+1)3 = K4+5K3+K5+ K3+3K2+3K+1= K4+6K3+13K2+12K+

K+1)2 (K+2)2 (K2+2K+1) (K2+4K+4)

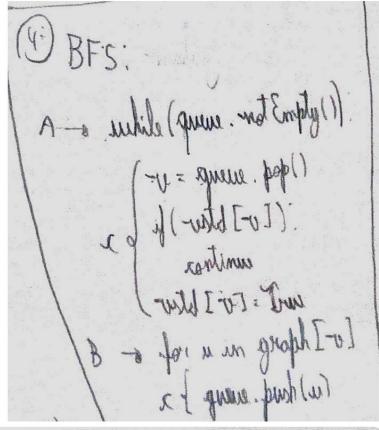
- K4+6K3+13K2+12K+4

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(3) Condinando, podemios ver que el forio (VI)glEP ro comeco e que el log(IEI) no tinal rote que el se atre ordine de de l'III vi comunità con-cortare de de l'III con timo for IVI viglEI tri (IEI) g(IEI) (IVI) (IVI) (IVI) (IVI) (IVI)

o japemas an agol bulevio hism- on a grad admirman ranson entrimos o strumotuje i amisaily semisary viant on a aray airini ab transme a land on strumvalimic a i ano amathi a anop admimos super co menor dente or spe , casas co radomo me medicise Highlight anciena lyons note -imax roman as admimax-elect a sup The tambin a miner cominho, nam analisação ala etnemizara o inal Sem-18 Everlo.



(P) DFS: [a] (-ustal [-v]).

x of the sum = Lo-1 blue
and = Lo-1

B - for a in graph[v]:

A - dfs(graph, -o.td, a)

(((() () () () () ()

redugido para IEI que a quantidade de sanoriose de xono de sol IVI de colo mó, e "A" continuará percorrento dos os IVI curtires, daí.

0(1V1+ IVI- IEI) = 0(1V1+ IEI)

(5) Teoremo Mentre: T(m) = aT(\frac{n}{v}) + \land (m), b> d(n) comporer n bogsa A) T(m) = T(m) +3 =) a= 1, b=2=) mlog 2 = 1 3=0(1)=) T(m)=+ (lg(m)) B) T(m)= 9T(m/3)+ m + a=9, b=3, [(m)=m + nbg3 = g)2 m= O(n2)=) T(n)= O(n2)) C) T(m1=3T(m/2) + m2=) a=3, b=2, l(m1=m2=) m/2= m1,5... m2=Ω(mlog2), & 3. (2) = cm2 and ε<1 T(m) = O(m2) D) T(m) = 4T(m/2) + m2 = 0 = 4, b = 2, f(m) < m2 = mbg/2 = m2 m2= 0 (m2) => [T(m)=0 (m2)g(m)] El Cinulada! (5) F) T(m)= 16T(m/4)+ m! > a=16, b=4, d(m)=m! nlogq 16 n2, m!= \(\Omega(m) \overline{16m!} \le cm! \overline{16m!} \overline{16m!} \le cm! \overline{16m!} \le cm! \overline{16m!} \overline{16m!} \le cm! \overline{16m!} \

(6:) de first For(-n). :(0>/n) \(\ p- - second tor(m ** 2)
T(-1) - first tor(n-1) (K) rothmass. les a () (K<0): M - third ton (K) 1-14-1) - second For (16-1) (i) refluit la (0> de) (i) ("Logal's + Aq") Initial T(4-12 third For(i-1) Third For & O(i), Second For a TIM: TK-11+K= T(K-2) + K-1+K= T(K-2)+2K-1= T(1) + K2 - (K-1), doi: O(K2) Sint For a T(n) = T(n-1) + p = T(1)+ mp - (p-1), doi: O(mp), -mon pranto O(K2), a Ká khomade rom n2, dai: O(n. n1)= O(n5)