Class 22

Thursday, January 14, 2021 10:08 PM

$A = G \cdot 2 \cdot A''$

$B = G \cdot 2 \cdot B''$

Let's assume, $\gcd(A, B) = G$

$A = G \cdot A'$

$B = G \cdot B'$

Hence, $\gcd(A', B') = 1$ ✗

$A = G \cdot x \cdot A''$

$B = G \cdot x \cdot B''$

$\gcd(A', B') = x$

$A' = x \cdot A''$

$B' = x \cdot B''$

$12 = 3 \cdot 4$

$15 = 3 \cdot 5$

↳ 1

— o —

$\gcd(A, B) = G$

$15 = (1, 3, 5, 15)$

$45 = (1, 3, 5, 9, 15, 45)$

$15 \rightarrow 1, 3, 5, 15$

$8! = 2 \cdot 3 \cdot 4 \cdot 5 \cdot 6 \cdot 7 \cdot 8$

$= \frac{2 \cdot 3 \cdot 2^2 \cdot 5 \cdot 2 \cdot 3 \cdot 7 \cdot 2^3}{}$

$= 2^{7} \cdot 3^{2} \cdot 5^{1} \cdot 7^{1} \rightarrow 7 + 2 + 1 + 1 = 11$

— o —

$n! \rightarrow p$

$8! \rightarrow 2, 3, 5, 7$

$n! \rightarrow p$

↳ $\log_p(n)$

p in n!

$$= \left\lfloor \frac{n}{p} \right\rfloor + \left\lfloor \frac{n}{p^2} \right\rfloor + \left\lfloor \frac{n}{p^3} \right\rfloor + \left\lfloor \frac{n}{p^4} \right\rfloor + \cdots$$

↳ $n! = 8!$ $(p=2)$

↳ $\left\lfloor \frac{8}{2} \right\rfloor + \left\lfloor \frac{8}{4} \right\rfloor + \left\lfloor \frac{8}{8} \right\rfloor = 4+2+1 = 7$

↳ $\left\lfloor \frac{8}{3} \right\rfloor + \left\lfloor \frac{8}{9} \right\rfloor = 2$

↳ $\left\lfloor \frac{8}{5} \right\rfloor = 1$

↳ $\left\lfloor \frac{8}{7} \right\rfloor = 1$

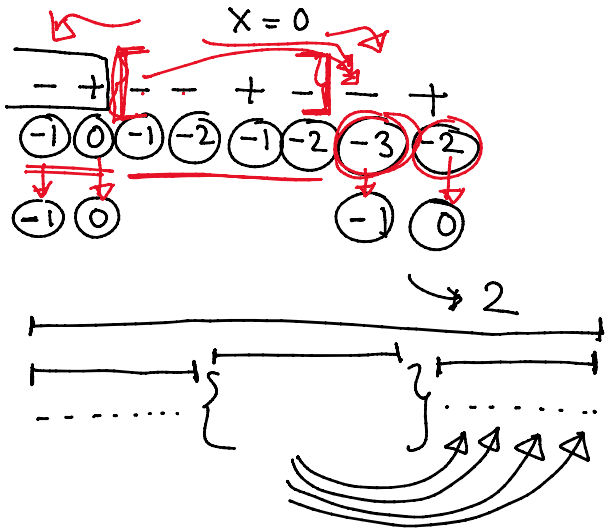
$n \times \log_p(n)$

$n \log n$

$x=0$

$[l, r]$

$x=0$ →

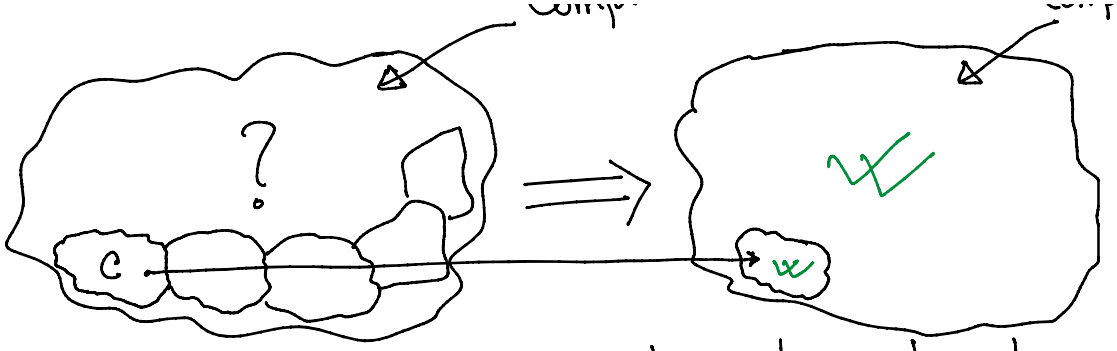


Greedy

Complete Problem

Complete Solution

Greedy



105 টাকা

1	2	5	10	20	50	100
∞	∞	∞	∞	∞	∞	∞

1×100

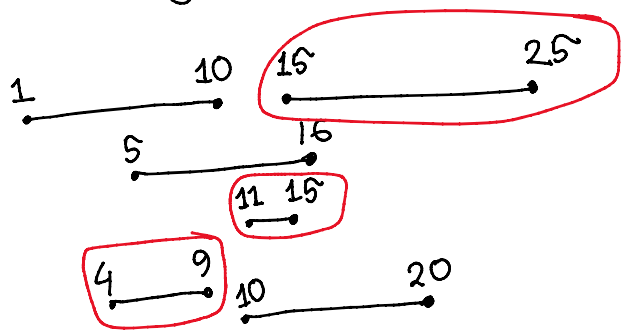
1×5

—o—

Activity Selection Problem

N সংখ্যক task

- [starting time, ending time]

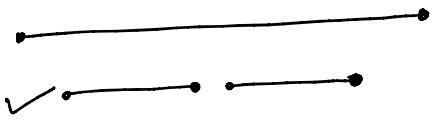


6

1	10
15	25
5	16
11	15
4	9
10	20

Approach: 1 ⊗

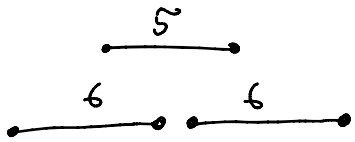
largest time-frame



Approach: 2 ⊗

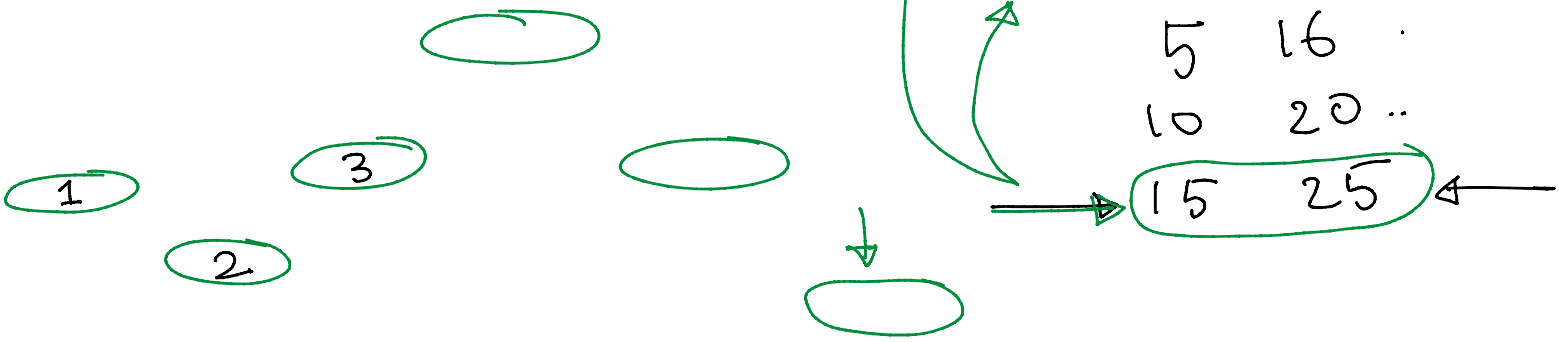
Approach:2 ✗

smallest timeframe



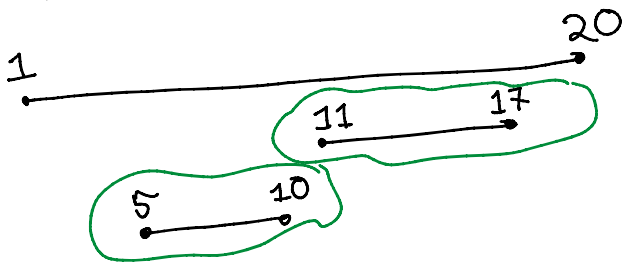
Approach:3

ending time (inc)



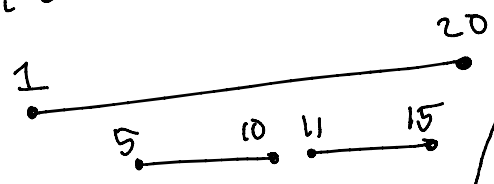
Approach 4: ✗

end time (dec)



Approach:5 ✗

start time (inc)

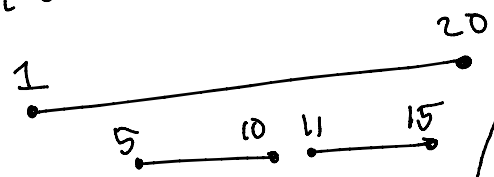


✓

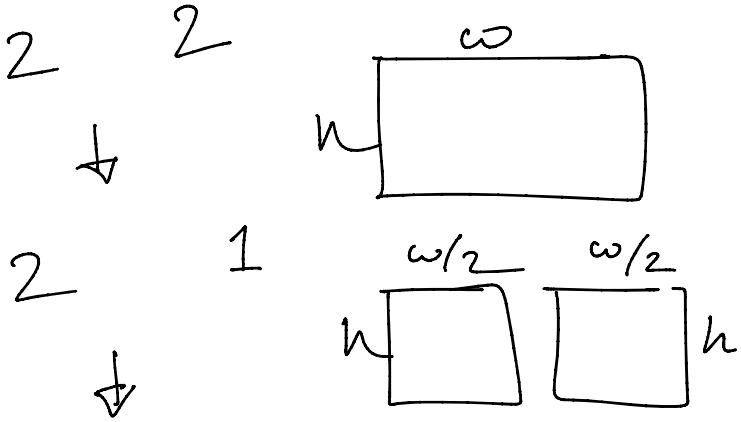
start time (dec)

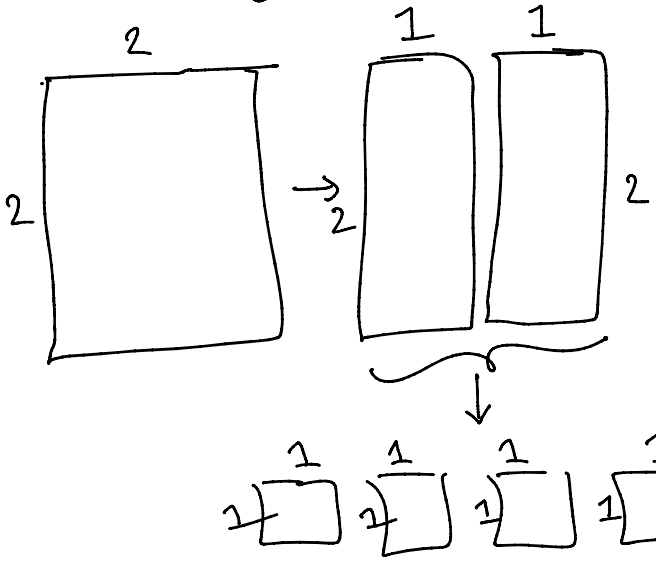
Approach: 5 ✗

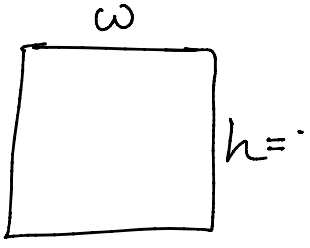
start time (inc)

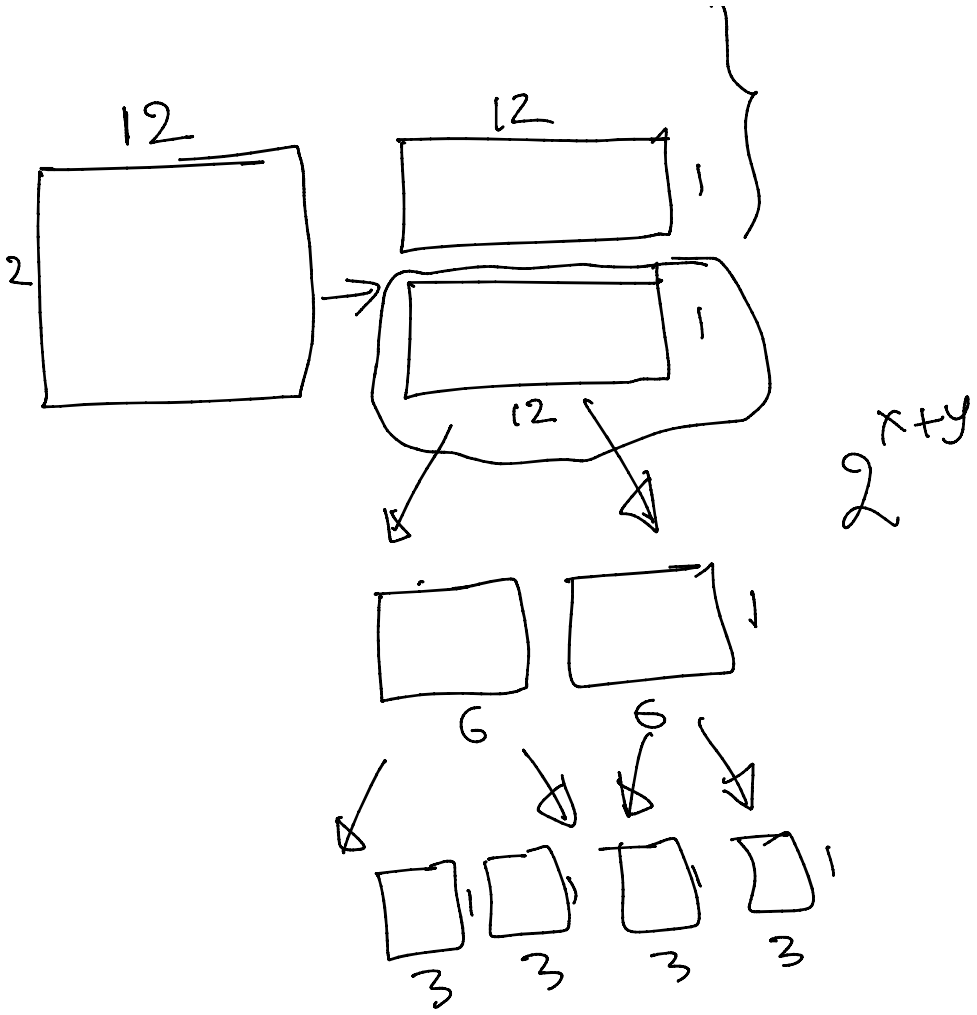


start time (dec) ✓








12
12
1
2
1
12
2^{x+y}
1
6
6
1
1
1
1
3
3
3
3