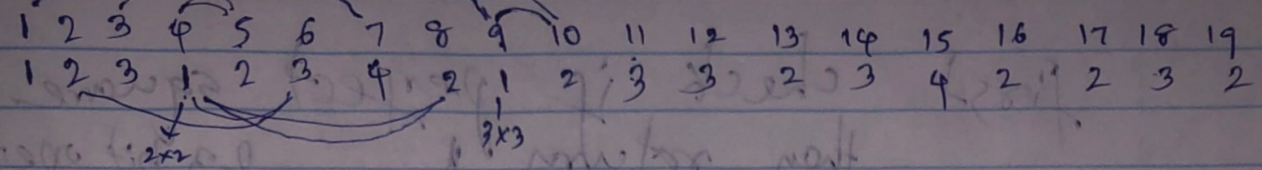
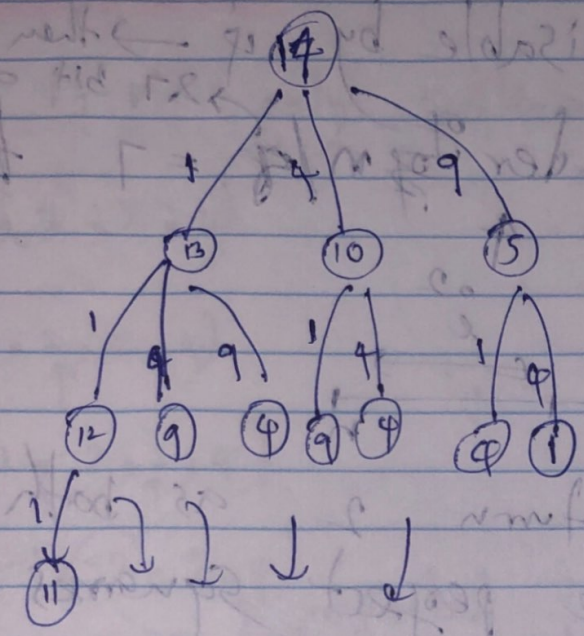
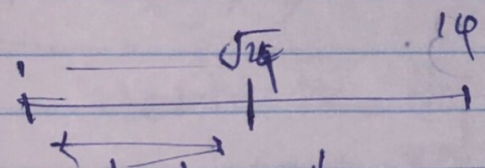
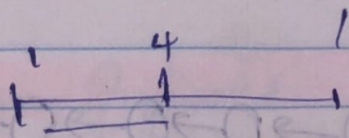
*Perfect Squares





to avoid recalculation we can use dp.





when $n=0$ terminate.
if $n<0$ then we can't proceed in that way.

- Can use Legendre's theorem

$a^2+b^2+c^2 \neq$ if and only if not $4^a(8b+7)$

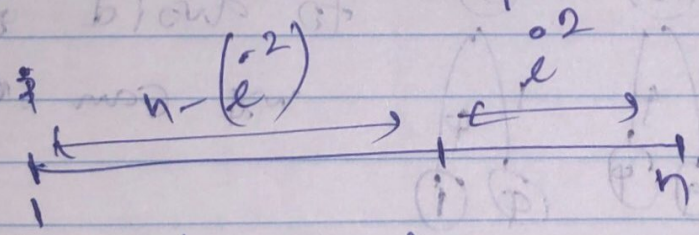
No: _____ Date: __/__/____

$a^2 + b^2 + c^2 \neq 4^a(8b+7)$

first check if perfect square.
then return 1

check if divisible by 4 → then do till not
↑ &3 bit operation
↑ &7 bit operation

check remainder of $n/4 = 7$ then
return 4



then return 2 as both
sides are perfect squares.

else return 3.