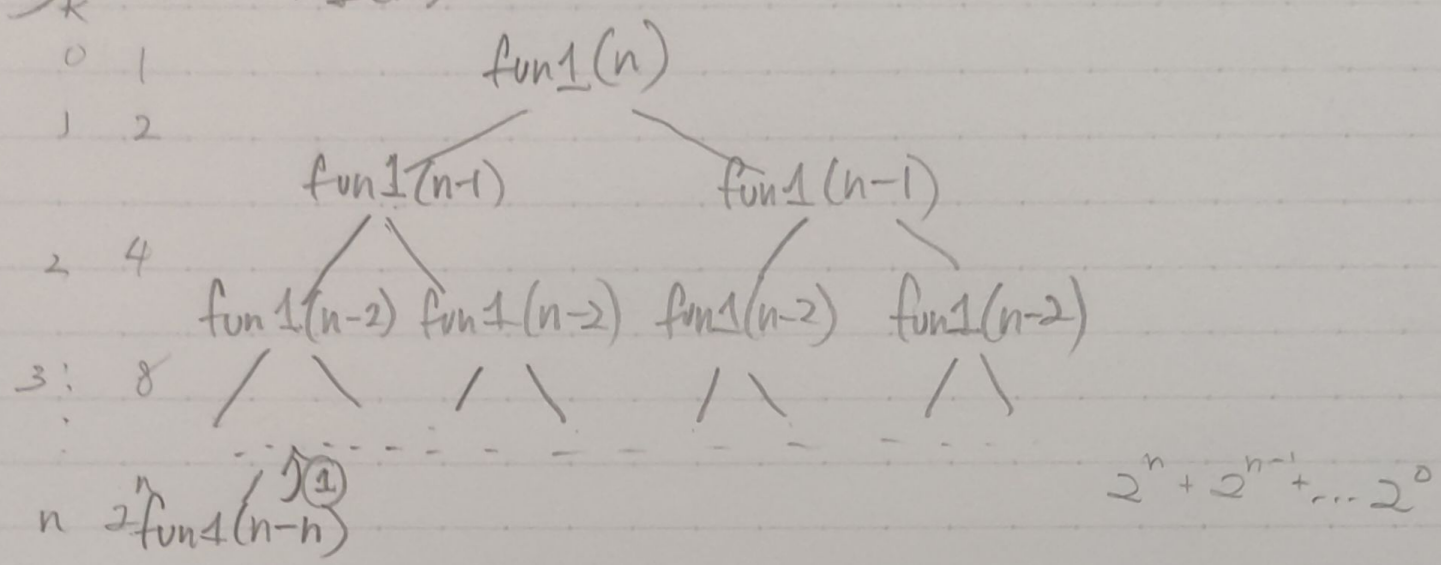
a) def fun1(n):



$2^n + 2^{n-1} + \dots 2^0$

~~cost of code~~: $\sum_{k=0}^{n} 2^k$

total asymptotic runtime

b) def fun2(n):

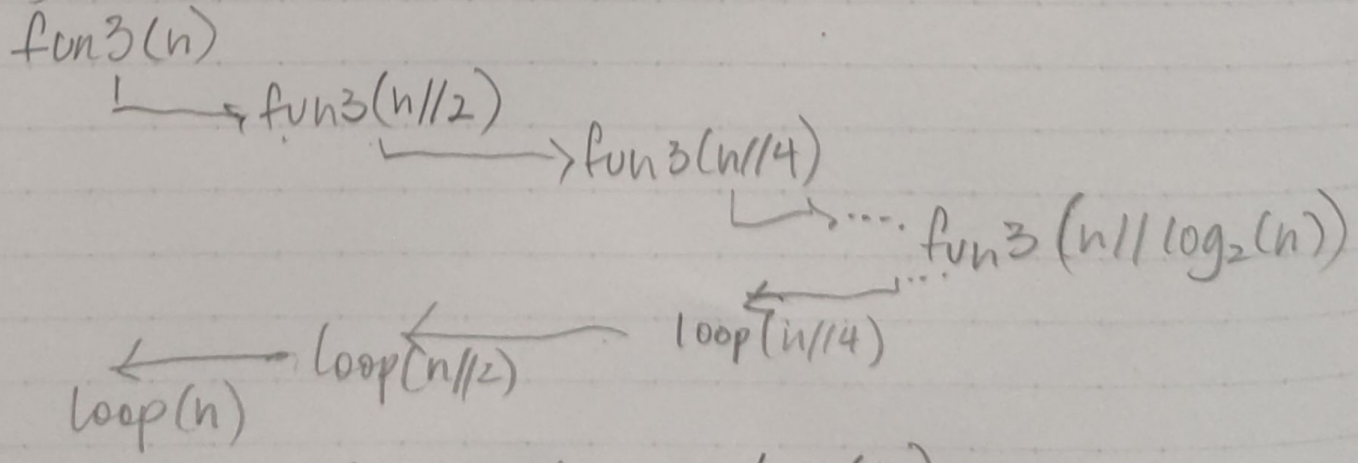
fun2(n)
↓
fun2(n//2)
↓
fun2(n//4)
↓
fun2(n//8)
⋮
fun2(n//$2^{?}$) → $n \leq 2^{?}$
↓
0

~~total asymptotic~~

total asymptotic runtime = $\log_2 n$

? = $\log_2(n)$

c) def fun3(n):



total asympotitic runtime: $n \cdot \log(n)$