

# WARMUP

Solving Recurrences

①  $T_n = 2T_{n-1} + 1$   
 $T_1 = 1$

Determining Recurrences

(give the recurrence for the provided code.)

④ `def pow(a b):`  
`if (b == 0):`  
 `return 1`  
`return a * pow(a, b-1)`

②  $f(n) = 10 + f(n-2)$   
 $f(1) = f(0) = 10$

⑤ `def pow2(a b):`  
`if (b == 1):`  
 `return a`  
`x = pow(a, b/2)`  
`ret x * x`  
 b must be a power of 2

③  $f(n) = 3 + f(n/2)$   
 $f(1) = 3$   
 n is a power of 2

⑥ `def fib(n):`  
`if (n == 1 or n == 0):`  
 `return 1`  
`return fib(n-1) + fib(n-2)`