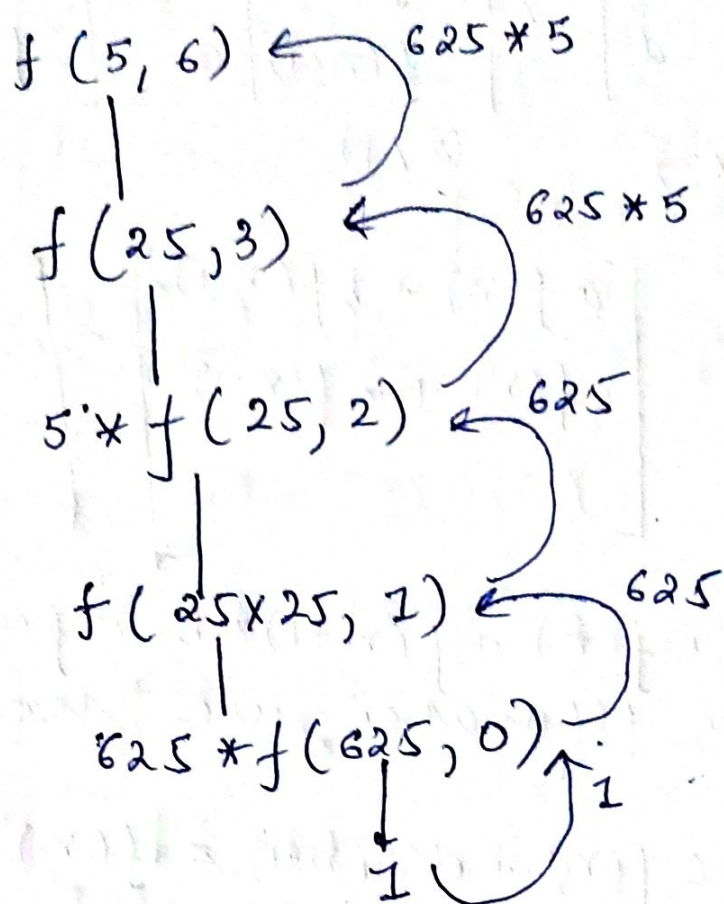


$f(a, n) = a^n \% 10^7$
 say $a = 5, n = 6$.



One thing that you will notice is that whenever an odd power is hit the result starts appearing.

