

1.

$T(0) = a$; for some constant a

$T(1) = s + b + T(0)$; for some constant b

$T(s) = s + b + T(s - 1)$

2.

$T(s) = s + b + T(s - 1)$

$= s + b + (s + b + T(s-2))$

$= 2s + 2b + T(s-2)$

then, for all $j = 1, 2, 3 \dots$ we have

$T(s) = j*s + j*b + T(s - j)$

let $j = s$

$T(s) = s*s + s*b + T(s - s)$

$= s^2 + sb$

since b is a constant,

the time complexity of function kaboom is $\Theta(s^2)$