

NO.

DATE /

HW 1

$$T(n) = 2T(n/2) + n \quad \sum n = 2^k$$

$$T(2^k) = 2\cancel{T}(2^{k-1}) + 2^k$$

$$\cancel{T}(2^{k-1}) = \sum \cancel{T}(2^{k-2}) + 2^{k-1}$$

$$\cancel{T}(2^{k-2}) = \sum \cancel{T}(2^{k-3}) + 2^{k-2}$$

⋮

$$\cancel{T}(2^1) = 2\cancel{T}(1) + 2$$

$$T(2^k) = k \times 2^k$$

$$T(n) = n \log_2 n$$