

$$M(n) = 3 M(n/2) \quad \text{for } n > 1$$

$$M(1) = 1$$

$$\boxed{n = 2^k} \Rightarrow k = \log_2 n$$

$$M(2^k) = 3 M(2^k/2^1)$$

$$= 3 M(2^{k-1})$$

$$= 3 [3 M(2^{k-2})]$$

$$= 3^2 M(2^{k-2})$$

$$= 3^3 M(2^{k-3})$$

$$= 3^4 M(2^{k-4})$$

$$= 3^5 M(2^{k-5}) \Rightarrow 3^i M(2^{k-i})$$

$$\Rightarrow 3^k M(2^{k-k})$$

$$\Rightarrow 3^k M(2^0)$$

$$\Rightarrow 3^k M(1)$$

$$\Rightarrow 3^k //$$

$$\Rightarrow 3^{\log_2 n}$$

$$\Rightarrow n^{\log_2 3}$$

$$\Rightarrow \underline{\underline{n^{1.585}}}$$

$$\boxed{\begin{matrix} \log_b c & \log_b a \\ a^{\log_b c} & = c^{\log_b a} \end{matrix}}$$

performed well over ^{integers} 600 digits long