

$$f(n) = O(g(n)) \Rightarrow 2^{f(n)} = O(2^{g(n)})$$

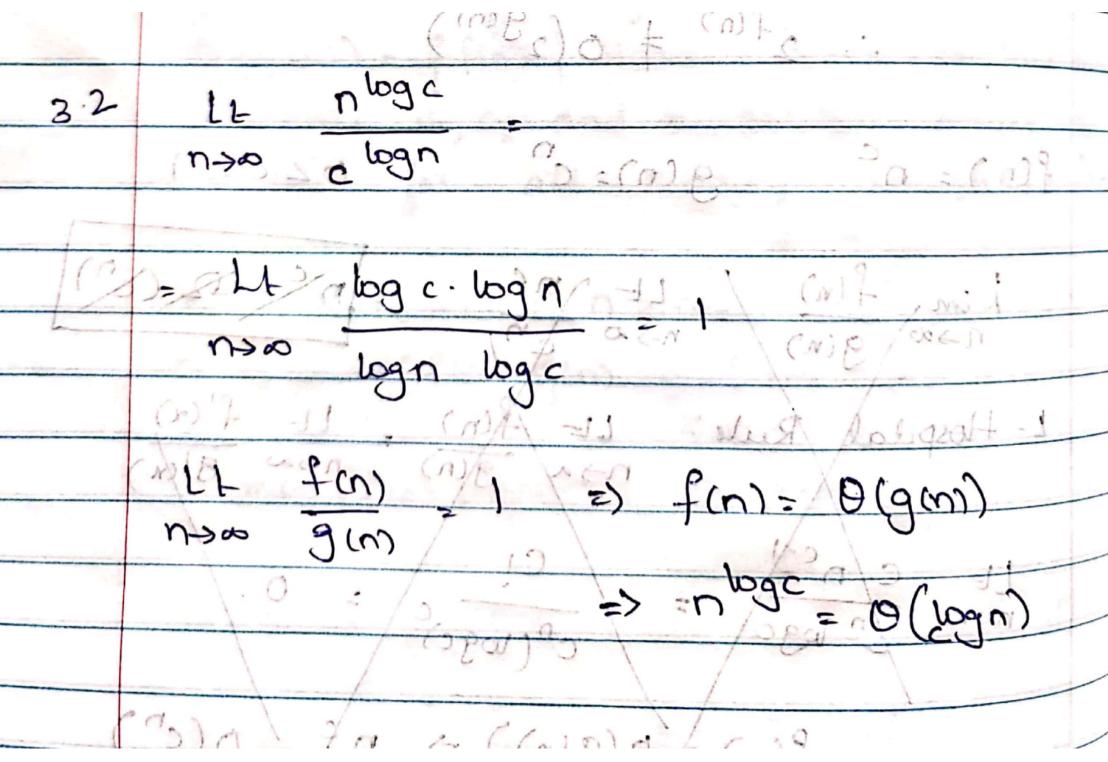
$$f(n) = O(g(n))$$

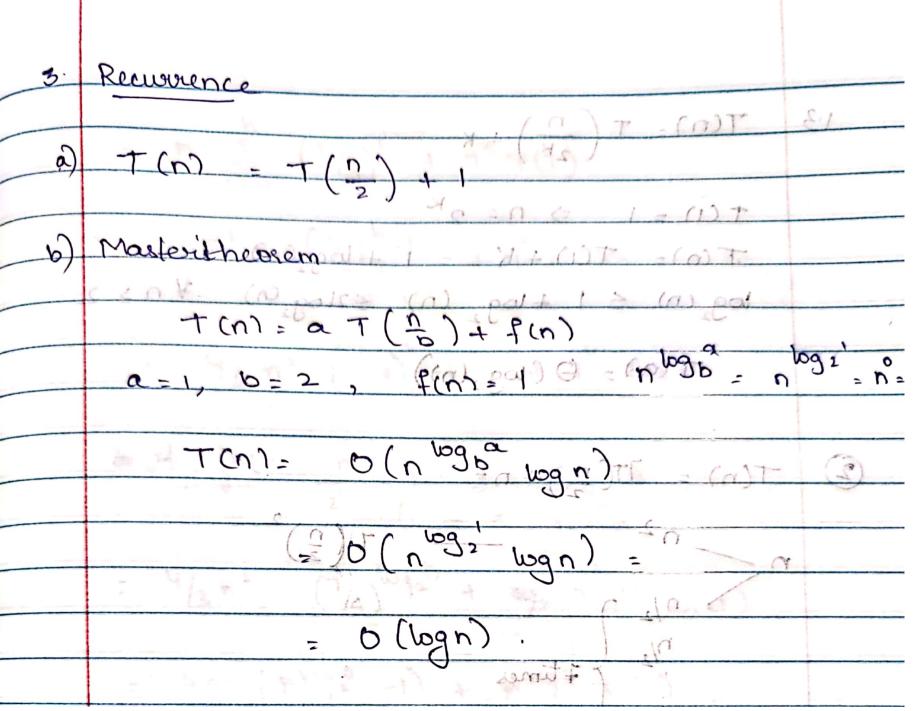
$$\Rightarrow 0 \ge f(n) \le C \cdot g(n)$$

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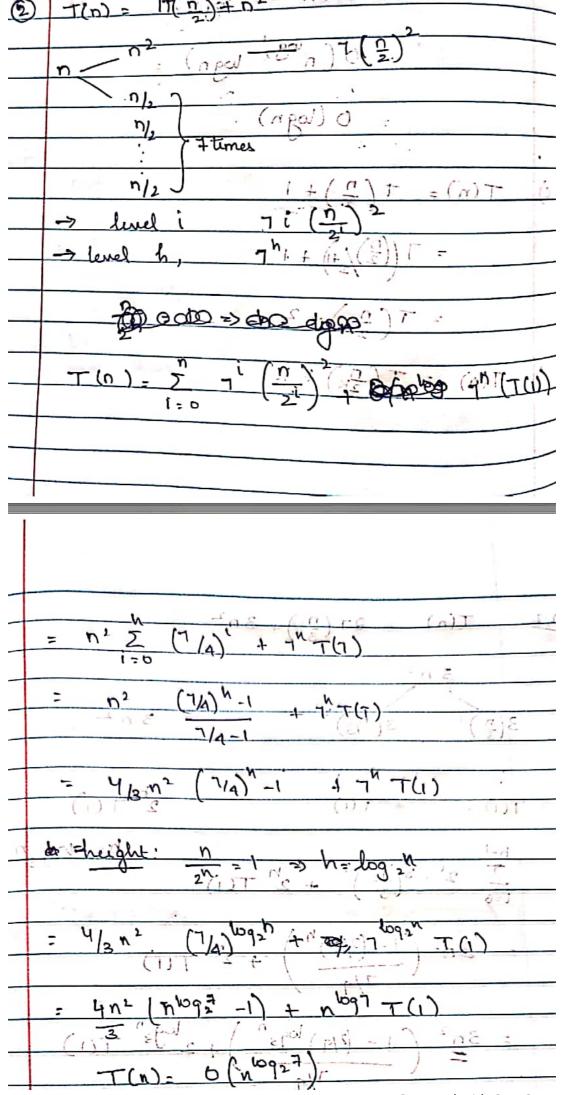
$$\Rightarrow 0 \ge f(n) = 2 \cdot \log n$$

$$\Rightarrow \log n \qquad g(n) = \log n$$





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2.2	$T(n) = 2T(\frac{n}{3}) + 3n^{2}$
~	3 1 - 1 () () ()
3	$\left(\frac{n}{3}\right)^2$ $3\left(\frac{n}{3}\right)$
~	$\frac{1}{(1)} \cdot \frac{1}{(1)} \cdot \frac{1}$
	$\frac{h-1}{2}$ $\frac{h-1}{2}$ $\frac{h}{3}$ $\frac{h}{2}$
	$= (3\pi^{2} \left(\frac{1 - (2/9)^{1}}{7/9} \right)^{1/2} + 2\pi + (1)^{1/2}$
-	$\frac{(1-\frac{1}{4})^{2}}{3n^{2}}\left(1-\frac{1}{4}\log_{3}^{2}\right) + \log_{3}^{2} = 1$
	$= \frac{3n^2}{1 - (2/9) \log_3^n} + 2 \log_3^n = (1)$
	$= O(n^2)$
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2.4	$T(n) = 2. T(\frac{n}{4})^{\frac{1}{4}} \sqrt{n}$
	a = 2, b = 4
	$\frac{1}{n\log b^{\alpha}} = \frac{\log 4^{2}}{n} = \frac{1}{(n)^{\alpha}} = \frac{1}{(n)^{\alpha$
	$T(n) = O(n \log 6^{\alpha} \log n)$ $= O(\pi \log n)$
1.0	= 1 (2) + (