$1 \cdot T(m) = 3T(m) + m^2$ 3: $T(m) = T(m/2) + 2^m$
Solh.
T(n) = aT/m/1+f(n), Solid Q = 1
b = 2
$\frac{a \geq 1, b > 1}{f(m) = 2^n}$
On company $c = \log \alpha = \log \alpha = 0$
$a=3$, $b=2$, $f(n)=n^2$ $m^2=m^2=1$
Now,
$C = \log a = \log 3 = 1.584$ $f(n) > n^{c}$
ne=n1.584 < n2 T(=)=0(2n)
$f(n) > \gamma^{c}$
$\frac{1}{1} \left(\frac{1}{2} \right) = \frac{1}{2} \left(\frac{1}{2} \right) = \frac{1}$
$2 \cdot T(m) = 4T(m/2) + m^2$
$301\%, a \ge 1, b > 1$
$a=4$, $b=2$, $f(m)=m^2$ $C=log_1a=log_2^m$
e = log 4 = 2
$\frac{02}{0}$
$\frac{\partial}{\partial x} = \frac{\partial}{\partial x} = \frac{\partial}$
$\frac{1}{1+(n)} = \frac{n^2}{n^2}$
$\overline{T(n)} = \Theta(n^2 \log_2 n) \qquad \text{if } T(n) = \Theta(n^2 \log_2 n)$
$\frac{6 \cdot T(n) = 2T(n/2) + n\log n}{1 \cdot T(n-2) \cdot T(n/2) + n\log n}$
$\frac{5 \cdot 7(n) = 16T(\frac{n}{4}) + n}{30!!} \frac{30!!!}{a = 16 \cdot b = 4} \frac{a = 2, b = 2}{f(n) = n \log n}$
$\frac{50!}{50!} \frac{(1)^{2}}{(1)^{2}} = \frac{100}{100}$ $C = \frac{100}{100} = \frac{100}{100}$ $C = \frac{100}{100} = \frac{100}{100}$
$C = \log 16 = \log (4)^2 = 2$ in $n^2 = n^2 = n$
Since, nlogn>n
$\mathcal{N}_{c} = \mathcal{N}_{c}$
$f(n) < n^{c}$
$(n - T(n) = \theta(n^2)$
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the second of th	
7.7(n) = 27(n) + n/109n	8.7(n) = 2T (m) + n0.51
Sol! a=2, f(n)= 1/logn	50 : $a=2$, $b=4$, $f(n)=n$. $c=\log a=\log 2=0.5$
$C = \log_2^2 = 1$., nc = no.5
Since, may on togn	3/n6, no.5 < no.51
The state of the s	$f(n) > n^{c}$
$f(n) < m^{c}$ $T(n) = \theta(m)$	$\frac{1}{2} \cdot \frac{1}{2} \left(\frac{1}{2} \right) = \frac{1}{2} \left(\frac{1}{2} \right) \cdot \frac{1}{2} \cdot \frac{1}{2$
2 - 12 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	1- Tim)-16T/M1+M1

9.7(m)=0.57/m)+1/m	10. T(n)=16T(m)+n1
501: a = 0.5, b = 2	Soly a=16, b=4, f(n)=n1
Since acc. to Master theorem	$\frac{1}{10000000000000000000000000000000000$
a > 1, but here a 1x 0.5	Now, n°= n.2
so we cannot apply master	As m1>n2
theorem.	$T(n) = \Theta(n1)$

11. 4T (m/2) + 609m	12.1(n) = 5987(n)1(1/2)+109n
Colm.	30/M: a=m, b=2
a=4, b=2, f(n)=logn	$C = \log_{1} \alpha = \log_{2} \sqrt{n} = \frac{1}{2} \log_{2} n$
10 0 10 0 POLES	02 02
c = logba = log24 = 2	:. 1 log 2n < log(n)
$in m^c = m^2$	
fen) = logn	inf(n)>mc
	No in the second of the second
since logn (n²	$T(n) = \Theta(f(n))$
is font mc	and some and
	$= \Theta(\log(n))$
:,T(m) = 0 (mc)	
$=\theta(m^2)$	$(m)\theta = (m)T$.

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	Date
13. T(n)=3T(n/2)+n	14. T(m) = 3T/m/3) + sqrt(n)
solia=3, b=2, f(n)=n	301^{51} $a=3$ $b=3$
C = 109 a - 109 3 = 1.5849	$c = \log_{1} \alpha = \log_{3} = 1$
1.5849	$\frac{1}{2} \cdot m^2 = m^2$
$\frac{1}{2} \frac{1}{2} \frac{1}$	Ax 398+(n) <n< td=""></n<>
in 201.2049	$inf(m)< m^{c}$
\Rightarrow $f(n) < n^{c}$	
:T(m)=0(m1:5849)	$T(n) = \theta(n)$
15. T(n)=4T(n/2)+(n	16. T(n)=3T (n/y)+nlogn
Sol'a=4, b=2	Sol" a=3, b=4, f(n)=nlogn
$C = \log a = \log 4 = 2$	$C = \log_{b}^{q} = \log_{4}^{3} = 0.792$
5 mc = m2	nc= n0.792
i. con < n2 for any constant	1
:. f(n) <n0< td=""><td>:. T(m) = 0 (nlogn)</td></n0<>	:. T(m) = 0 (nlogn)
$\frac{1}{1}\left(\frac{1}{1} + \frac{1}$	
$-\frac{1(m)=0(m^2)}{2}$	10. 1700
12 Trans - 27 / 201 1 2 201	18. T(n) = 6T(n/3)+n2logn
$\frac{17.77(n) = 3T(n/3) + n/2}{50!. a = 3, b = 3}$	a=6, $b=3$
	-C= log a= log 6 = 1.6309
$C = \log \alpha = \log 3 = 1$	mc= m1.6309
f(m) = n/2	Ar n1.6309 < n2-logn
:. nc= n1 = n	
At MI	"T(m) = 0 (m2 logn)
$\frac{41}{100}$ $\frac{1}{100}$	Print !
-: +(m) < mc	TON THE TONE
T(n) = A(n)	

30.T(m) = 64T(m/8) 501'': $\alpha = 64$, b = 8:. me= m2 nc= n2 i. n2logn > n2 in my cm2 i. $T(n) = \Theta(n^2 \log n)$:. T(n) = 0 (n2) 22. T(n)=T(n/2)+n(2-cosn $2i \cdot T(n) = 7T(n/3) + n^2$ $a = 7 \cdot b = 3 \cdot f(n) = n^2$ Soln: a=1, b=12 c= loga = log1 = 0 C= log a = log 7 - 1.7712 ·. nc=no=1 nc= n117712 :, n(2-cosn)>nc > m1.7712 < m2

i. T(n)= O(m2)

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1(n)= 0 (n(2-cosm)