D T(n) = 3T(n/2) + n2 T(n) = aT(n/b) + f(n2) a>1, b>1 oucomparing a=3, b=2, fn=(n2) C = logba = log_3 = 1.584 nc= n1.584 < m2 度(n) > n2 をT(n) = のm2

e> T(n) = 4647(n/2)+n2 a7,1,671 $a = 4, b = 2, f(n) = n^2$ C= log24=2 $n^2 = n^2 = f(n) = n^2$ T(n) = O(n2 log2n)

多T(n)=T(n/2)+2× a= 1, b=2, fcn)=2" C=log 2 C = 0 n= 1 fcn>n T(n)= O(2n)

4> T(n)= 2" T(n/2)+n" a=2", b=2, f(n)=17 C= log_2n=n fen)=nc T(n)=0 (n2 log2n)

5> TCn)= 16T(n/4)+n a= 16,2 b=4, f(n)= n2 C= log_ (u)2= 2 loguk finjene T(n) = -0(n2/10g2n)(0(n2)

6) T(n) = 2T(n/2) + dogn $a = 2, b = 2, f(n) = n \log n$ $c = \log_2 2 = 1 \quad n^c = n.$ $n \log_2 n > n$ $T(n) = O(n \log_2 n)$

7) T(n) = 2T(n/2) + n/logn a= 2, b= 2, f(n) = n/logn C = log 2=1 nc= n $\frac{n}{T(n)} = O(n)$

8> T(n) = 2T(n/4) + no.5) a=2, b=4, f(m)=n0.5) c= log 42 = 0,5 nc=no.5 nois < 000,51 f(n) > nc TCn) = O(nors)

a> T(n) = 0.5 T(n/2) + 1/n a=0.5, 5=2 azi, but here a cas so we can't appy masters method.

```
16) T(n) = 37 (n/4) + n logn
  10) T(n)=16T(n/4) +nd
     a=16, b=4, f(n) = n }
                                 a=3, b=4, +(n) =n logn
                                 C= logn3 = 0.792
nc = no.792 nc < f(m)
    C= logy 16=2 n=n2
       n \mid > n^2
                                  T(n) = O(nlogn)
     T(n) = 0 (n1)
                               17) T(n) = 3T(n/3) + n/2
                                a=3, b_13, f(n)=n/2
 11) 4T(n/2) + togn
                                 c=1 nc/f(n)
   a=4, b=2, f(n) = legn
                                 T(n) = 0 (n)
  C= lug 2 4 = 2
                               18> T(n) = 6T(n/3)+m2logn
    Q^2 = N^2
                                 a=6, 5=3, b(n)=n2lgn
   T(n)= 0 (n2)
                                  C= log 36 = 1,6309
12> T(n) = Sept (n).T(n/2) + Logn
                                  ne (n2 logn
                                T(n) = 0 (n2 logn)
  9= Jn 7 b=2, fcm)=logn
  C= leg 2 m= 1 leg n
                               19) T(n)=4 T(n/2)+n/ Luga
                                a = 4, b = 2, f(n) = \frac{n}{\log n}
  = f(n) > ne
                                C= log 1 = 2
  T(n) = O(log(n))
                                   Togn Cn2
13> T(n) = 3T (n/2) +n
                                  1 T(n) = O(n2)
   a=3, b=2, fcn)=n
  C= lug 23=1.584
                            020) T(n) = 64T (140) - n2/legn
   n < n^{1.58}
T(n) = O(n^{1.58})
                               a=64, b= 8.
                               C= log 864=2
                                 nc=n2 n2/ligh > n2
914> T(n)=ST(n/3)+29x+(m)
                                   [T(n) = 0 (n2 logn)
 a=3, b=3, fcm)= Vm
                            QD T(n)= 7T(n/3)+n2
 C= day 33=1
                             a=7, b=3, c= log37=1.7712
  nc = fcm)
                                 nt Lfin)
   T(n)= O(n)
                                て(か)=のいか)
 95) T(n) = 4T(n/2) +n
                            22) T(n)=T(n/2) + n/2 - Cosn
    a=4,572, fcn)=n
                                 a=1, b=2, c= log2=0
   c=log 4=2
nc> f(n)
                                  n (2-losn) >nc
    T(n)= O(n2)
                                   T(n) = 0 (n (.2-cosn)
```