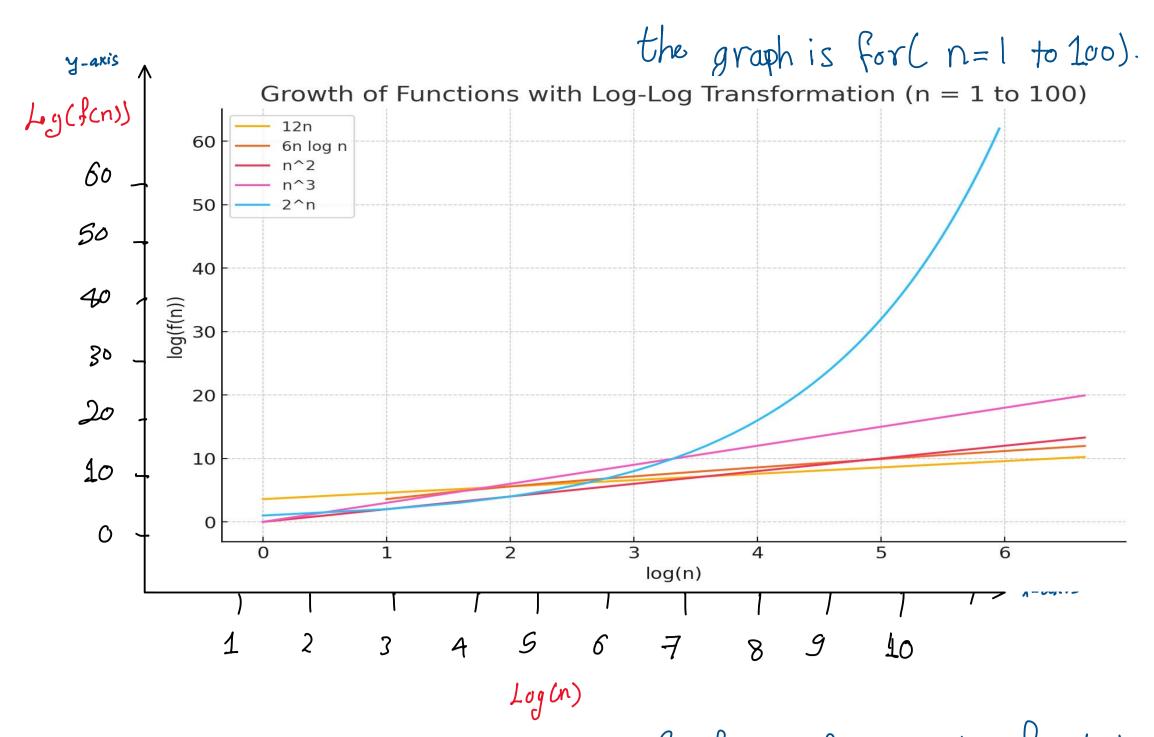
12n, 6n logn, n2, n3, 2 problem - 1

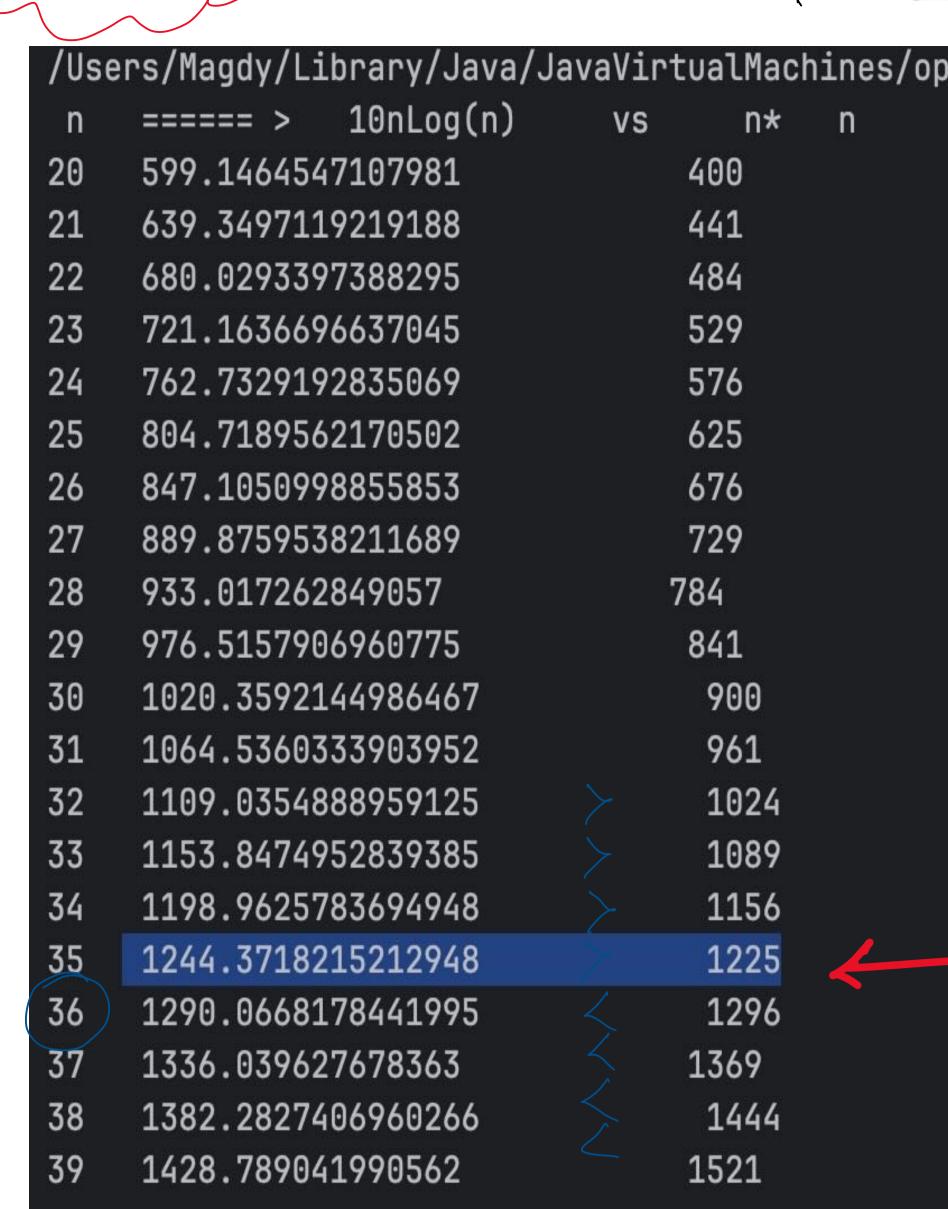


to draw y-axis we need to get log f(n) for all the functions.

$\sim$	Logn'	12n	6n logn	n 2	N3	2 N
)	0	12	O	1	J	2
2	1	24	12.000	4	8	4
3	1.58	36	28.529	9	27	8
4 5	2-32	48 60	48.000 <b>6</b> 9-657	16 28	64 125	6 32

this table is y-axis for the 2hore table

Log(12N)	200 (6n logn)	Log (n²)	Lag n3	209 2 n
3.58	-inf	0	D	1
4.58	2.58	2	3	2
5.169	4.83	3	4.75	3
5.58	5.58	4	6	H
5.90	6.12	4.64	6.965	5



Process finished with exit code 0

for 10 log(n) > n

is until n equals & by using numerical solution

By Writing Simple Code to print the values of both algorithms in different (n) values we find that it

0 n = 36

R-1.6 Order the following list of functions by the big-O notation.

(l) -	Log	(logn)
	1	

$$\frac{3}{n}$$

$$\Im$$
  $\Im$ 

$$8 2n log^2 n \qquad (3) 4 log (n)$$

$$9 n^2 log n \qquad (4) n$$

$$a = 4(n) \sqrt{n}$$

R-1.10 Give a big-O characterization, in terms of n, of the running time of the Loop1 method below:

Algorithm Loop1(n)  $s \leftarrow 0$ for  $i \leftarrow 1$  to n do  $\longrightarrow n$  $s \leftarrow s + i$ 

So the big 0 is O(n)

R-1.14 Perform a similar analysis for method Loop5 below:

Algorithm Loop5(n)  $s \leftarrow 0$ for  $i \leftarrow 1$  to  $\underline{n}^2$  do  $\Rightarrow ^{n^2}$ for  $j \leftarrow 1$  to i do  $\begin{cases} 1 \\ s \leftarrow s + i \end{cases}$ 

to Calculate Big O for this problem we need to Gunt How many temes the SK Sti Statement executes

# problem-6

Prove:

 $\log_b x^a = a \log_b x$ 

y = Logb x a

So the left side equals the right side