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BATCH	C
SUBJECT	DAA
EXPERIMENT NO :	1A
DATE OF PERFORMANCE	30-01-2023
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AIM:	To implement the various functions e.g. linear, non-linear,quadratic, exponential etc.The input (i.e. n) to all the above functions varies from 0 to 100 with increment of 1. Then add the function n! in thelist and execute the same for n from 0 to 20.

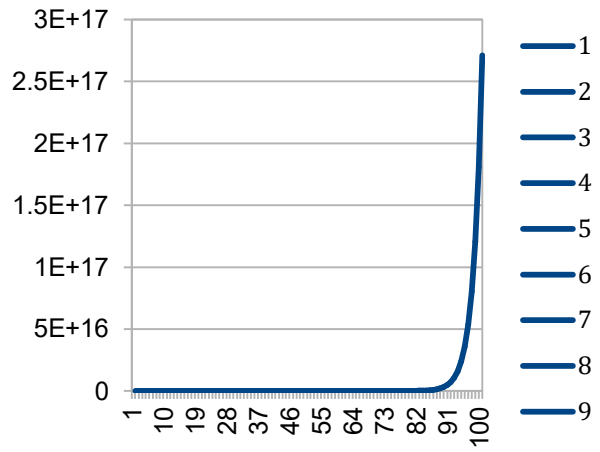
ALGORITHM	1. Declare floating variables a1,a2,a3,a4,a5,a6,a7,a8,a9,a10.
	2. Assign a function to each variable –
	a1=pow(3.0,i)/pow(2.0,i);
	a2=pow(i,3);
	a3=pow(log2(i),2);
	a4=log2(factorial(i));
	a5=pow(2,(pow(2,i)));
	a6=i;
	a7=log(log(i));
	a8=log2(i);
	a9=i*(pow(2,i));
	a10=pow(i,(log2(log2(i))));
	3. Create a floating variable fact and assign it the factorial function.
	float fact=factorial(i);
	4. Print the results of all these functions for numbers 1 to 100.
	5. Paste the result in an Excel sheet and create graphs for all functions

PROGRAM	#include<stdio.h> #include<math.h>

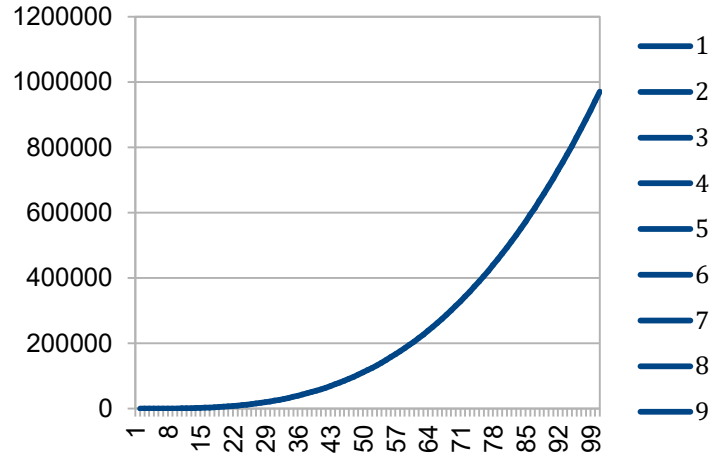
```
float factorial(int n)
{
   float ans=1;
   for(n;n>=1;n--)
   {
      ans=ans*n;
   }
   return ans;
}
void main()
{
   float a1,a2,a3,a4,a5,a6,a7,a8,a9,a10;
   int i;
   for(i=0;i<=100;i++)
   {
      a1=pow(3.0,i)/pow(2.0,i);
      a2=pow(i,3);
      a3=pow(log2(i),2);
      a4=log2(factorial(i));
      a5=pow(2,(pow(2,i)));
      a6=i;
      a7=log(log(i));
      a8=log2(i);
      a9=i*(pow(2,i));
      a10=pow(i,(log2(log2(i))));
      float fact=factorial(i);

printf("\n%d\t%.3f\t%.3f\t%.3f\t%.3f\t%.3f\t%.3f\t%.3f\t%.3f\t%.3f\t%.3f\t%.3
   }
}
```

RESULT (SNAPSHOT):

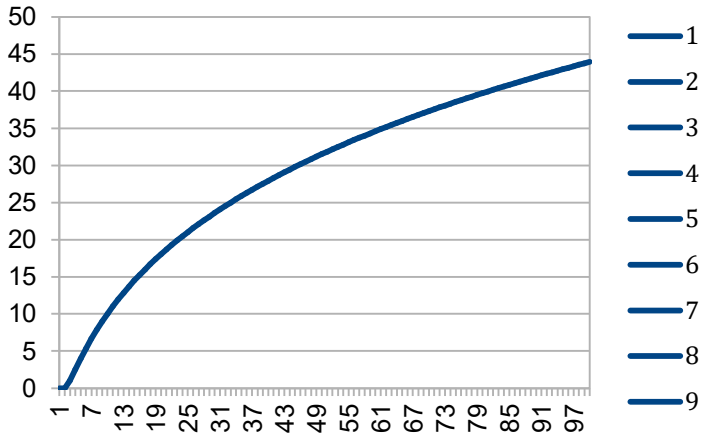
1. **(3/2)^n**



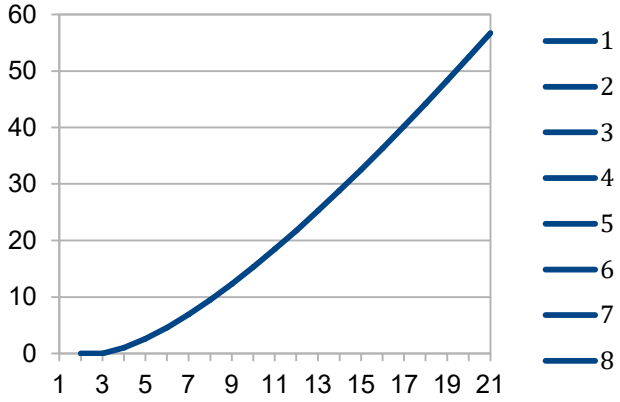
2. **n^3**



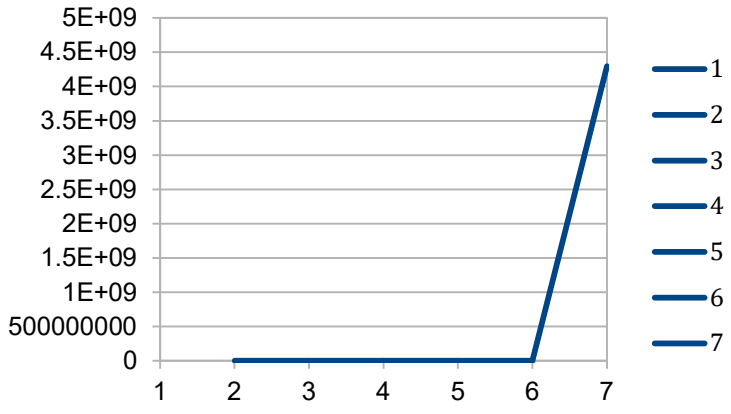
3. (lg(n))^2



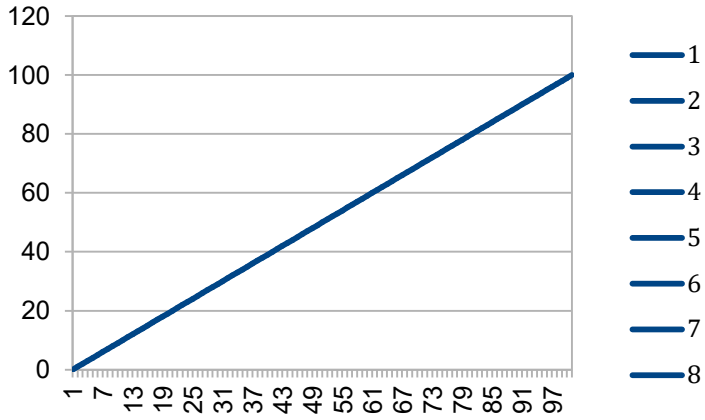
4. lg(n!)



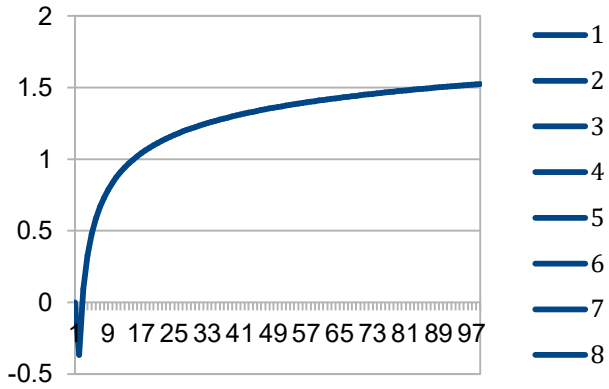
5. 2^(2^n)



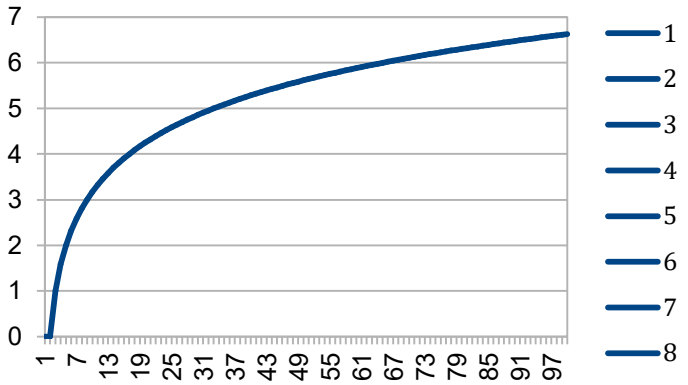
6. n



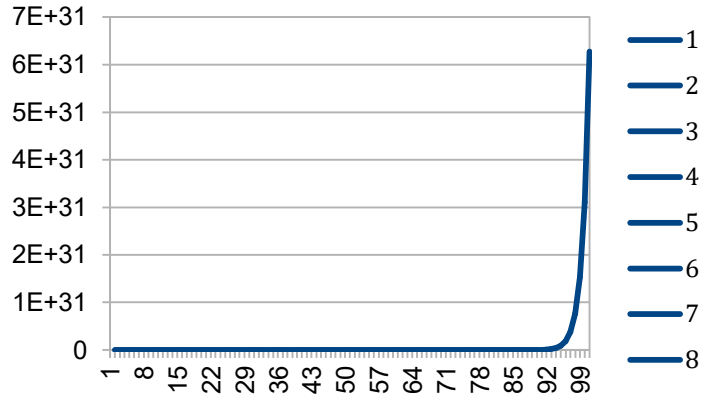
7. ln(ln(n))



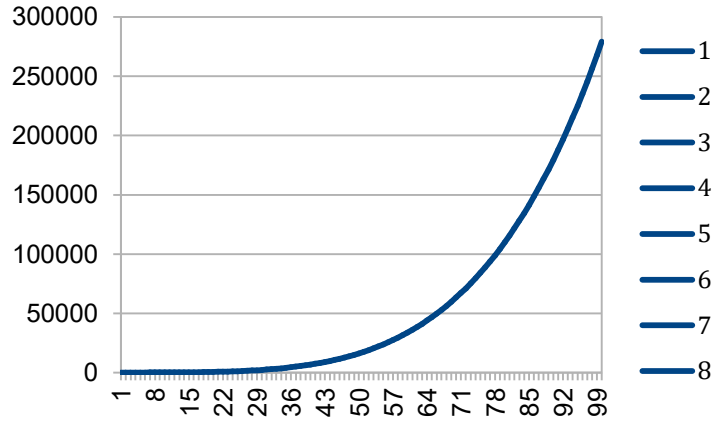
8. lg(n)



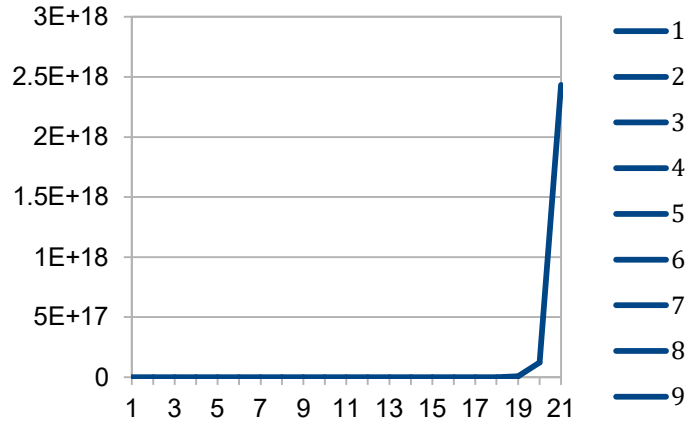
9. n*(2^n)



10.n^(lg(lg(n)))



11.n!



CONCLUSION :

With the help of this experiment, I was able to understand and implement various functions graphically and was also able to note the changes in the values of the functions when input is varied from 0 to 100.