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UID no.	2022701001	
Experiment No.	1	

AIM:	To implement the various functions e.g. linear, non-linear, quadratic, exponential etc.					
					P	rogram 1
PROBLEM STATEMENT:	For this experiment, you have to implement at least 10 functions from the following list.					
	$(\frac{3}{2})^n$	n^3	$\lg^2 n$	lg(n!)	$2^{2^{n}}$	$n^{1/\lg n}$
	$\ln \ln n$	$\lg n$	$n \cdot 2^n$	$n^{\lg\lg n}$	$\ln n$	$2^{\lg n}$
	$2^{\lg n}$	$(\lg n)^{\lg n} \\ 2^{\sqrt{2\lg n}}$	e^n	$(\lg n)!$	$(\sqrt{2})^{\lg n}$	$\sqrt{\lg n}$
	$\lg (\lg n)$	$2^{\sqrt{2 \lg n}}$	n	2^n	$n \lg n$	$2^{2^{n+1}}$
			ove functi	ons varies	from 0 to 10	00 with increment of 1. Then 0 to 20.
Algorithm/ Theory:	Input. for(int j= inv inv inv Inv } 4. After invoking input.	tions name. op 100 times =0; j <= 100; voking functivoking functivoking functivoking functivoking functivoking functivoking function	j++){ on1(); on2(); on3(); ion11();	op, print th	e values retu	roviding 0 to 100 as an arm by the function at each 00 times for 100 inputs.

6. Stop.

PROGRAM:

```
#include <stdio.h>
#include <math.h>
double func1(int i){
  return pow(2,i);
  }
int func2(int n){
  return n;
}
double func3(double n){
  return log2(n);
}
double func4(double n){
  return n*log(n);
}
double func5(double n){
  double a = log 2(n);
  return sqrt(a);
}
double func6(int n){
  return round(pow((3.0/2.0),n));
int func7(int n){
  return pow(n,3);
}
double func8(double n) {
  return round(pow(2, log2(n)));
}
double func9(int n){
  return n*(pow(2,n));
double func10(int n){
  return log2(log2(n));
}
```

```
long long factorial(int n) {
  if (n == 0) {
     return 1;
  return n * factorial(n-1);
int main()
  printf("Input || FUNCTION 1(n)\t || \tFUNCTION 2(2^n)\t \t ||\t \tFUNCTION3(log2(n))
\| t \cdot t \cdot tFUNCTION5(Sqr(log(n))) \cdot n'');
  for(int j=0; j \le 100; j++){
     printf("n=%d\t\t",j);
     //1st function call [n]
     int f2 = func2(j);
     printf("%d",f2);
     //2nd function call [2^n]
     double result = func1(j);
     printf(" %.1f",result);
     //3rd function call [log2(n)]
     double 11 = (double) j;
     double \lg = \text{func3}(11);
     printf("\t \t \t \t');
     printf("%lf",lg);
     //4th function call [n*log(n)]
     double lg2 = func4(j);
     printf("\t \t \t \t');
     printf("%lf",lg2);
     //5th function call [Sqr(log(n))]
     double sqr = func5(i);
     printf("\t \t \t \t');
     printf(" %lf \n",sqr);
  }
printf("\n");
printf("Input ||\tFUNCTION6((3/2)^n) ||\tFUNCTION7(n^3) ||\tFUNCTION8(2^log2(n))
\|\text{tFUNCTION9}(n*2^n)\| \|\text{tFUNCTION10}(\log_2(\log_2(n))) \|;
printf("\n");
```

```
for(int i=0; i \le 100; i++){
     printf("n=\%d\t\t",i);
//6th function call [(3/2)^n]
     double fun6 = func6(i);
     printf(" %.11f ",fun6);
//7th function call [n^3]
     printf("\t\t\t %d",func7(i));
//8th function call [2^log(n)]
     double fun8 = func8(i);
     printf("\t \t \t \.2f",fun8);
//9th function call [n*2^n]
     double fun9 = func9(i);
     printf("\t\t\t\t%.11f",fun9);
//10th function call [log2(log2n)]
     double fun10 = func10(i);
     printf("\t\t\t\f\n",fun10);
//11th function call [n!]
printf("INPUT\t\tFUNCTION11(n!)");
for (int k = 0; k \le 20; k++)
  printf("n=\%d\n",k);
     double fun11 = factorial(k);
     printf("\t\t\t\t\f\n",fun11);
  return 0;
```

RESULT:

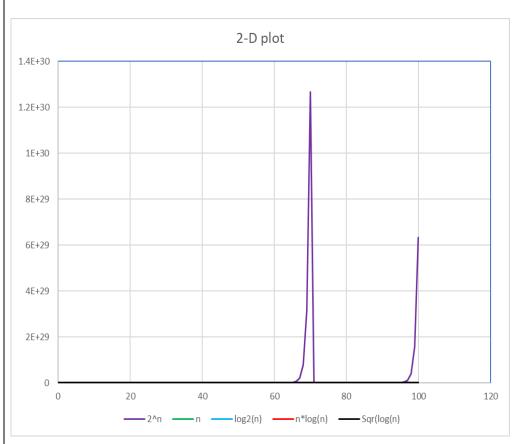
	qp5n00yv.ui2' 'stder FUNCTION 1(2^n)	r=Microsoft-MIEngine-Error-r32xfbz5.jot''pi FUNCTION 2(n)	<pre>d=Microsoft-MIEngine-Pid-ag0utr FUNCTION3(log2(n)) </pre>	neo.ndc' 'dbgExe=C:\msys64\mingw64\bin\ FUNCTION4(n*log(n))	gdb.exe' 'interpreter=mi' FUNCTION5(Sqr(log(n)))
n=0		1.0	-inf 0.000000	nan na	in
n=1 n=2	1 2	2.0 4.0	0.000000 1.000000	0.000000 1.386294	0.000000 1.000000
n=3	3	8.0	1.584963	3.295837	1.258953
n=4 n=5	4 5	16.0 32.0	2.000000 2.321928	5.545177 8.047190	1.414214 1.523787
n=6	6	64.0	2.584963	10.750557	1.607782
n=7 n=8	7 8	128.0 256.0	2.807355 3.000000	13.621371 16.635532	1.675516 1.732051
n=9		512.0	3.169925	19.775021	1.780428
n=10 n=11	10 11	1024.0 2048.0	3.321928 3.459432	23.025851 26.376848	1.822616 1.859955
n=12		4096.0	3.584963	29.818880	1.893400
n=13 n=14	13 14	8192.0 16384.0	3.700440 3.807355	33.344342 36.946803	1.923653 1.951244
n=14 n=15	15	32768.0	3.906891	40.620753	1.976586
n=16	16 17	65536.0	4.000000	44.361420 48.164627	2.000000 2.021747
n=17 n=18	18	131072.0 262144.0	4.087463 4.169925	48.104627 52.026692	2.021747
n=19	19	524288.0	4.247928	55.944341	2.061050
n=20 n=21	20 21	1048576.0 2097152.0	4.321928 4.392317	59.914645 63.934971	2.078925 2.095786
n=22		4194304.0	4.459432	68.002934	2.111737
n=23 n=24	23 24	8388608.0 16777216.0	4.523562 4.584963	72.116367 76.273292	2.126867 2.141253
n=25		33554432.0	4.643856	80.471896	2.154961
n=26 n=27	26 27	67108864.0 134217728.0	4.700440 4.754888	84.710510 88.987595	2.168050 2.180570
n=28	28	268435456.0	4.807355	93.301726	2.192568
n=29	29	536870912.0	4.857981	97.651579 102.035921	2.204083
n=30 n=31	30 31	1073741824.0 2147483648.0	4.906891 4.954196	102.035921 106.453603	2.215150 2.225802
n=32		4294967296.0	5.000000	110.903549	2.236068
n=33 n=34	33 34	8589934592.0 17179869184.0	5.044394 5.087463	115.384750 119.896258	2.245973 2.255540
n=35	35	34359738368.0	5.129283	124.437182	2.264792
n=36 n=37	36 37	68719476736.0 137438953472.0	5.169925 5.209453	129.006682 133.603963	2.273747 2.282423
n=38	38	274877906944.0	5.247928	138.228274	2.290836
n=39	39 40	549755813888.0	5.285402	142.878904	2.299000 2.306930
n=40 n=41	40 41	1099511627776.0 2199023255552.0	5.321928 5.357552	147.555178 152.256455	2.306930 2.314639
n=42	42	4398046511104.0	5.392317	156.982124	2.322136
n=43 n=44	43 44	8796093022208.0 17592186044416.0	5.426265 5.459432	161.731605 166.504344	2.329434 2.336543
n=45	45	35184372088832.0	5.491853	171.299812	2.343470
n=46 n=47	46 47	70368744177664.0 140737488355328.0	5.523562 5.554589	176.117504 180.956937	2.350226 2.356818
n=47	48	281474976710656.0	5.584963	185.817649	2.363253
n=49	49	562949953421312.0	5.614710	190.699195	2.369538
n=50 n=51	50 51	1125899906842624.0 2251799813685248.0	5.643856 5.672425	195.601150 200.523107	2.375689 2.381685
n=52	52	4503599627370496.0	5.700440	205.464673	2.387559
					Ln 54, Col 155
n=53 n=54	53 54	9007199254740992.0 18014398509481984.0	5.727920 5.754888	210.425471 215.405139	2.393307 2.398935
n=55		36028797018963968.0	5.781360	220.403325	2.404446
n=56 n=57	56 57	72057594037927936.0 144115188075855872.0	5.807355 5.832890	225.419695 230.453922	2.4 0 9845 2.415138
n=58	58	288230376151711744.0	5.857981	235.505695	2.420327
n=59 n=60	59 60	576460752303423488.0 1152921504606846976.0	5.882643 5.906891	240.574709 245.660674	2.425416 2.430410
n=61	61	2305843009213693952.0 4611686018427387904.0	5.930737	250.763306	2.435311
n=62 n=63	62 63	9223372036854775808.0	5.954196 5.977280	255.882332 261.017488	2.440122 2.444848
n=64 n=65	64 65	18446744073709551616.0 36893488147419103232.0	6.000000 6.022368	266.168517 271.335173	2.44949 0 2.454051
n=66	66	73786976294838206464.0	6.044394	271.335173	2.458535
n=67 n=68	67 68	147573952589676412928.0 295147905179352825856.0	6.066089 6.087463	281.714405 286.926524	2.462943 2.467278
n=69	69	590295810358705651712.0	6.108524	292.153349	2.471543
n=70 n=71	70 71	1180591620717411303424.0 2361183241434822606848.0	6.129283 6.149747	297.394667 302.650271	2.475739 2.479868
n=72		4722366482869645213696.0	6.169925	307.919961	2.483933
n=73 n=74	73 74	9444732965739290427392.0 18889465931478580854784.0	6.189825 6.209453	313.203539 318.500817	2.487936 2.491877
n=75		37778931862957161709568.0	6.228819	323.811609	2.495760
n=76 n=77	76 77	75557863725914323419136.0 151115727451828646838272.0	6.247928 6.266787	329.135734 334.473017	2.499585 2.503355
n=78	78	302231454903657293676544.0	6.285402	339.823288	2.507070
n=79 n=80	79 80	604462909807314587353088.0 1208925819614629174706176.0	6.303781 6.321928	345.186380 350.562131	2.510733 2.514344
n=81	81	2417851639229258349412352.0	6.339850	355.950382	2.517906
n=82 n=83	82 83	4835703278458516698824704.0 9671406556917033397649408.0	6.357552 6.375039	361.350978 366.763770	2.521419 2.524884
n=84 n=85	84 85	19342813113834066795298816.0 38685626227668133590597632.0	6.392317 6.409391	372.188611 377.625357	2.528303 2.531677
n=85 n=86	85 86	38685626227668133590597632.0 77371252455336267181195264.0	6.409391 6.426265	377.625357 383.073867	2.535008
n=87		154742504910672534362390528.0	6.442943	388.534006	2.538295 2.541541
n=88 n=89	88 89	309485009821345068724781056.0 618970019642690137449562112.0	6.459432 6.475733	394.005640 399.488637	2.544746
n=90	90	1237940039285380274899124224.0	6.491853	404.982870	2.547912
n=91 n=92	91 92	2475880078570760549798248448.0 4951760157141521099596496896.0	6.507795 6.523562	410.488215 416.004549	2.551038 2.554126
n=93 n=94	93 94	9903520314283042199192993792.0	6.539159	421.531753 554589 427.0	2.557178 69710 2.560193
n=95	95	19807040628566084398385987584.0 39614081257132168796771975168.0	6.	569856 432.6	18305 2.563173
n=96	96 97	79228162514264337593543950336.0		584963 438.1 599913 443.7	
n=97 n=98	98	158456325028528675187087900672.0 316912650057057350374175801344.0	6.	514710 449.3	26813 2.571908
n=99 n=100	99 100	633825300114114700748351602688.0 1267650600228229401496703205376.0		629357 454.9 643856 460.5	
11-100	100	120/030000226229401490/032053/0.0	0.0	400.5	2.37/508

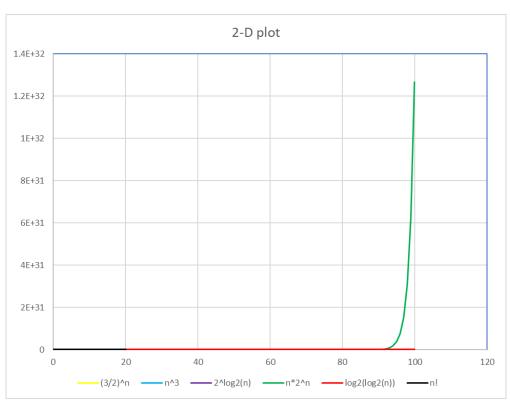
Dec	Input	FUNCTION6((3/2)^n)	FUNCTION7(n^3)	FUNCTION8(2^log2(n))	FUNCTION9(n*2^n)	FUNCTION10(log2(log2(n)))
n-1	n=0	1.0	А	9 99	9.9	nan
n=2						
n=3 3.8 27 3.88 3.8 8.064499 n=4 5.8 64 4.09 4.0 4.0 1.00000000000000000000000000000						
n=4 5,0 64 4,00 4,00 1,0000000 n=5 8.0 125 5,00 5,0 1,252323 n=6 11,0 216 6,00 7,0 1,49211 n=8 26,0 512 8,00 7,0 1,49211 n=9 38,0 729 9,00 9,0 1,604449 n=10 58,0 1000 19,00 16,0 1,732021 n=11 86,0 1331 11,00 11,0 1,049585 n=12 130,0 1778 12,00 12,0 1,94958 n=13 195,4 2197 13,10 11,0 1,94958 n=14 292,0 2744 14,00 1,40 1,96979 n=15 438,0 375 15,00 15,0 1,90789 n=16 532 18,00 15,0 1,90789 n=16 1,270 400 1,0 2,00000 n=16 1,10 1,0 2,0						
n-5 8.8 125 5.08 5.08 5.0 1.251233 n-6 11.0 216 6.08 6.0 6.0 1.370143 n-7 17.0 343 7.08 7.08 1.489211 n-8 25.0 512 8.08 8.0 1.584063 n-9 38.0 729 9.08 10.08 10.0 1.664449 n-10 58.0 1000 10.08 10.08 10.0 11.0 1.736221 n-11 86.0 1331 11.00 11.0 11.0 1.73625 n-12 130.0 1728 12.00 12.0 11.0 1.841958 n-13 195.0 2197 13.00 12.0 11.0 1.83767 n-14 292.0 2744 14.00 14.0 1.938789 n-15 438.0 3375 15.00 15.0 15.0 1.96621 n-16 657.0 406 16.00 15.0 15.0 1.96621 n-17 985.0 4913 17.00 17.00 17.0 18.0 2.000000 n-17 985.0 4913 17.00 17.00 15.0 15.0 1.0 2.000000 n-17 985.0 4913 17.00 17.0 18.0 2.0000000 n-19 2217.0 6859 19.00 17.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2						
n=6	n=5					
n-7						
n=8	n=7	17.0	343			
n-9 38.0 729 9.00 10.60 10.60 1.664449 n-10	n=8		512			
n-11	n=9	38.0	729			1.664449
n-12 136.6 1728 12.08 12.08 12.0 1.841958 n-13 195.6 2197 13.08 12.0 13.0 13.0 13.0 13.0 1.87697 n-14 297.0 2744 14.00 14.0 1.928789 n-15 436.0 3375 15.00 16.0 15.0 15.0 1.966021 n-16 657.0 4995 16.00 16.00 17.0 2.000000 n-17 905.0 4913 17.00 18.0 17.0 2.0000000 n-18 1478.0 5322 18.00 17.0 18.0 2.000001 n-19 271.0 6089 19.00 20.0 19.0 2.000799 n-20 3325.0 8000 20.00 20.0 21.0 2.000799 n-21 4908.0 9761 21.00 21.0 21.0 21.0 21.40962 n-22 7462.0 16648 22.00 22.0 21.40962 n-23 11223.0 12167 23.00 23.0 23.0 23.0 21.177499 n-24 16834.0 13624 24.00 24.0 23.0 23.0 21.777499 n-25 2551.0 15055 25.00 26.0 26.0 27.0 12.179910 n-25 2551.0 15055 25.00 26.0 26.0 27.0 12.17399 n-26 37877.0 17576 26.00 26.0 26.0 27.0 12.12333 n-26 37877.0 17576 26.00 26.0 27.0 27.0 27.12333 n-27 56615.0 19683 77.00 27.00 27.0 27.0 27.232796 n-27 56615.0 19683 77.00 27.0 27.0 27.0 27.232796 n-28 85232.0 21952 28.00 28.0 28.0 28.0 27.0 27.0 27.249411 n-28 85232.0 24952 28.00 28.0 28.0 28.0 27.0 27.249411 n-28 85232.0 24952 28.00 28.0 28.0 28.0 27.0 27.249411 n-28 487627.0 27.00 31.000000000000000000000000000000000	n=10	58.0	1000	10.00	10.0	1.732021
n=13 195.0 2197 13.00 11.0 1.887697 n=14 292.0 2744 14.00 14.0 15.0 1.987899 n=15 430.0 3375 15.00 15.00 15.0 1.96821 n=16 657.0 4096 15.00 16.0 16.0 2.000000 n=17 985.0 4913 17.00 17.0 2.0010000 n=18 1478.0 5832 18.00 17.0 2.0010000 n=18 1478.0 6859 19.00 19.0 22.1 2.000000 n=20 3325.0 8000 20.00 20.00 21.0 2.111675 n=21 4988.0 9261 21.00 21.0 21.0 2.14992 n=22 7482.0 16648 22.00 22.0 22.0 22.0 2.156860 n=23 1123.0 12123.0 12167 23.00 23.0 23.0 2.177459 n=24 16834.0 13824 24.00 24.0 24.0 24.0 2.19910 n=25 2555.1 15655 25.0 25.0 25.1 0 2.23796 n=26 37877.0 15756 26.00 25.0 25.0 2.15233 n=26 37877.0 15756 26.00 26.0 26.0 2.23796 n=27 56815.0 15655 27.00 25.0 25.0 25.0 2.23796 n=28 8522.0 21952 28.00 29.0 27.0 2.00377 n=30 191751.0 2900 30.00 30.00 30.0 2.2000 2.000 2.20000 2.2000 2.2000 2.2000 2.2000 2.2000 2.2000 2.2000 2.2000 2.20000 2.2000 2.2000 2.2000 2.2000 2.2000 2.2000 2.2000 2.2000 2.20000 2.2000 2.200000 2.200000 2.200000 2.200000 2.200000 2.200000 2.200000 2.200000 2.200000 2.200000000	n=11	86.0	1331	11.00	11.0	1.790535
n=14 292.8 2744 14.80 14.8 1.93789 n=15 438.8 3 3375 15.80 15.0 1.96621 n=16 657.8 4896 15.0 15.0 15.0 1.96621 n=17 985.8 4913 17.80	n=12	130.0	1728	12.00	12.0	1.841958
n=15	n=13	195.0	2197	13.00	13.0	1.887697
n=16 657.0 4896 16.00 15.0 2.000000 n=17 985.0 4913 17.00 17.00 18.0 2.060021 n=19 2217.0 6859 19.00 19.0 20.0 2.00075 n=20 3325.0 800 20.00 21.0 2.111075 n=21 4988.0 9261 21.00 21.0 2.134982 n=22 7482.0 10648 22.00 22.0 2.156600 n=23 11223.0 12167 23.00 23.0 2.177459 n=24 16834.0 13824 24.00 26.0 22.0 2.156600 n=25 52551.0 15675 25.00 25.0 2.215323 2.177459 n=26 33377.0 17576 26.00 25.0 2.215323 2.215323 n=27 56815.0 19633 27.00 27.0 2.24411 2.20624 2.20624 2.20624 2.205243 2.255243 2.255243 2.255243	n=14	292.0	2744	14.00	14.0	1.928789
n=17 985.0 4913 17.00 17.0 2.031206 n=18 1476.0 5832 18.00 19.00 19.0 2.006759 n=20 3325.0 8000 20.00 29.0 2.111075 n=21 4988.0 9261 21.00 21.0 21.04822 n=22 7482.0 10648 22.00 22.0 2.154862 n=23 11223.0 12167 23.00 23.0 2.177459 n=24 16834.0 13824 24.00 24.0 2.106010 n=25 25251.0 15625 25.00 25.0 2.177459 n=26 33877.0 17576 26.00 25.0 2.22796 n=27 56815.0 19633 27.00 27.0 2.249411 n=28 85223.0 21952 28.00 29.0 29.0 2.265243 n=29 127834.0 24389 29.00 29.0 29.0 2.288957 n=30 191751.0 <t< td=""><td>n=15</td><td>438.0</td><td></td><td>15.00</td><td></td><td></td></t<>	n=15	438.0		15.00		
n=18	n=16					2.00000
n=19 2217.0 6859 10.60 10.60 2.0 2.00 2.00 2.111675 n=20 3375.0 8800 20.00 20.00 21.	n=17			17.00		2.031206
n=20 3325.0 8808 20.08 20.08 20.0 21.0 21.1075 n=21 4988.0 9261 21.00 21.00 21.0 21.34982 n=22 7482.0 19648 22.00 22.0 21.56866 n=23 11223.0 12167 23.00 23.0 23.0 21.77459 n=24 16834.0 13824 24.00 24.0 23.0 21.77459 n=25 25251.0 15625 25.00 25.00 27.0 25.0 25.0 27.5323 n=26 37877.0 17576 26.00 27.00 27.0 2.249411 n=28 85223.0 19683 77.00 77.0 77.0 2.249411 n=28 85223.0 21952 28.00 29.0 29.0 29.0 2.26957 n=30 191751.0 27000 30.00 30.00 30.0 30.0 2.209869 n=31 287677.0 27991 31.00 31.0 2.209869 n=31 287677.0 29791 31.00 31.0 2.209869 n=32 431440.0 32768 32.00 32.00 32.0 2.249480 n=33 647160.0 35937 33.00 33.0 33.0 2.334681 n=35 1456110.0 42875 35.00 35.00 37.0 2.334681 n=37 3276247.0 50653 37.00 37.00 37.0 2.381132 n=38 4914370.0 50653 37.00 37.00 37.0 2.381132 n=40 110757745.0 50653 37.00 37.00 37.0 2.381132 n=40 110757745.0 50653 37.00 37.0 2.381132 n=40 110757745.0 50653 37.00 40.00 30.0 2.391748 n=40 110757745.0 50653 37.00 40.00 40.0 2.402013 n=40 110757745.0 50653 37.00 40.00 40.0 2.402013 n=44 11075322.0 60000 40000 40.00 40.0 40.0 2.402013 n=45 145610.0 91125 45.00 45.00 45.00 45.0 2.402013 n=46 110757745.0 91125 45.00 45.00 45.0 2.402013 n=47 1188924889.0 103823 47.00 47.00 47.00 47.0 2.402013 n=48 283367333.0 110592 48.00 44.00 44.0 2.448751 n=48 283367333.0 110592 48.00 47.00 49.00 49.00 2.448751 n=49 425010000 110769 49.00 49.00 49.00 2.4452011						
n=21	n=19			19.00		2.086759
n=22 7482.6 16648 22.60 22.6 22.6 2.156866 n=23 11223.6 12167 23.00 23.0 23.0 2.177459 n=24 16834.6 13824 24.60 24.60 2.196916 n=25 25251.6 15625 25.60 25.60 25.6 2.215323 n=26 37877.6 17576 26.60 26.60 26.6 2.232796 n=27 56815.6 19683 27.60 27.6 2.240411 n=28 8523.6 19683 27.60 28.00 28.0 22.04411 n=28 8523.6 21952 28.00 29.00 28.0 22.02337 n=30 191751.6 27600 30.00 30.00 22.080357 n=30 191751.0 27600 30.00 30.00 30.0 2.294899 n=31 287627.0 29791 31.00 31.00 31.00 2.396651 n=32 431440.0 32768 32.00 32.0 2.321928 n=33 647160.0 35937 33.00 33.0 2.34481 n=34 970740.0 39304 34.00 34.00 32.0 2.34681 n=35 1456110.0 42875 35.00 35.00 35.0 2.358757 n=36 2184164.0 46656 36.00 36.00 2.379143 n=37 3276247.0 50653 37.00 37.0 2.346946 n=37 3276247.0 50653 37.00 37.0 2.341122 n=38 4914370.0 54872 38.00 38.0 2.31132 n=38 4914370.0 54872 38.00 38.0 2.31132 n=38 4914370.0 54872 38.00 39.00 32.0 2.31132 n=38 4914370.0 54872 38.00 39.0 2.40213 n=40 11057332.0 64000 40.00 40.00 40.0 2.40213 n=44 5597745.0 59319 39.00 40.00 42.0 2.402913 n=44 5597745.0 85184 44.00 44.00 42.0 2.432574 n=45 83966017.0 91125 45.00 45.00 45.0 2.439959 n=47 188924889.0 193823 47.00 49.00 49.0 2.439959 n=47 188924889.0 193823 47.00 49.00 49.0 2.435211 n=49 42581200.0 110592 48.00 49.00 49.0 2.435211						
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n=50 637621500.0 125000 50.00 50.00 2.496681	n=49					
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n=52	1434648375.0	140608	52.00	52.0	2.511073
n=53	2151972563.0	148877	53.00	53.0	2.518011
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n=58	16341541652.0	195112	58.00	58.0	2.550404
n=59	24512312478.0	205379	59.00	59.0	2.556464
n=60	36768468717.0	216000	60.00	60.0	2.562399
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n=86	1392670187228261.0	636056	86.00	86.0	2.683980
n=87	2089005280842391.0	658503	87.00	87.0	2.687720
n=88	3133507921263587.0	681472	88.00	88.0	2.691407
n=89	4700261881895380.0	704969	89.00	89.0	2.695044
n=90	7050392822843069.0	729000	90.00	90.0	2.698630
n=91	10575589234264604.0	753571	91.00	91.0	2.702169
n=92	15863383851396906.0	778688	92.00	92.0	2.705660
n=93	23795075777095360.0	804357	93.00	93.0	2.709105
n=94	35692613665643040.0 53538920498464560.0	830584 957375	94.00	94.0 95.0	2.712505 2.715862
n=95 n=96	80308380747696832.0	857375 884736	95.00 96.00	96.0	2.715802
n=96 n=97	120462571121545248.0	884736 912673	96.00 97 .0 0	96.0	2.719175
n=97 n=98	180693856682317856.0	912673 941192	97.00 98.00	98.0	2.725678
n=98 n=99	271040785023476800.0	970299	99.00	99.0	2.728869
n=100	406561177535215296.0	1000000	100.00	100.0	2.732021
INPUT	FUNCTION11(n*n=1!)n		100.00	100.0	2.732021

1.000000 1.000000 2.000000 6.000000 24.000000 120.000000 720.000000 5040.000000 40320.000000 362880.000000 3628800.0000000 39916800.000000 479001600.000000 6227020800.000000 87178291200.0000000 1307674368000.0000000 20922789888000.000000 355687428096000.000000 6402373705728000.000000 121645100408832000.000000 2432902008176640000.000000 PS D:\Engineering\Program>







Observation:	We have plotted 2-D graph, X-axis representing 0 to 100 inputs and Y-axis representing the value Generated by the functions. By observing the output of each function in the graph, most of the function has produces Almost same value or value nearer to each other, therefore in the graph it is difficult to spot the difference between the output generated by every function.
Conclusion:	Thus, we have implemented various functions e.g. linear, non-linear, quadratic, exponential etc.