NAME: KRISH JAIN

BATCH: COMPS A(C)

UID: 2021300049

CODE:

```
#include <stdio.h>
#include<math.h>
float power(int n)
{
return pow(1.5, n);
}

float logsq(int n)
{
return log(n) * log(n);
}
float powpow(int n)
{
return sqrt(log(n));
}
float loga(int n)
{
return log(n);
}
```

```
float logdiv(int n)
{
return (log(n) / log(2.718));
}
float loga2(int n)
{
return log(log(n));
}
float expo(int n)
{
return exp(n);
}
float pown(int n)
{
return pow(2, n);
}
float cube(int n)
{
return n * n * n;
}
float func(int n)
{
return n * pow(2, n);
}
```

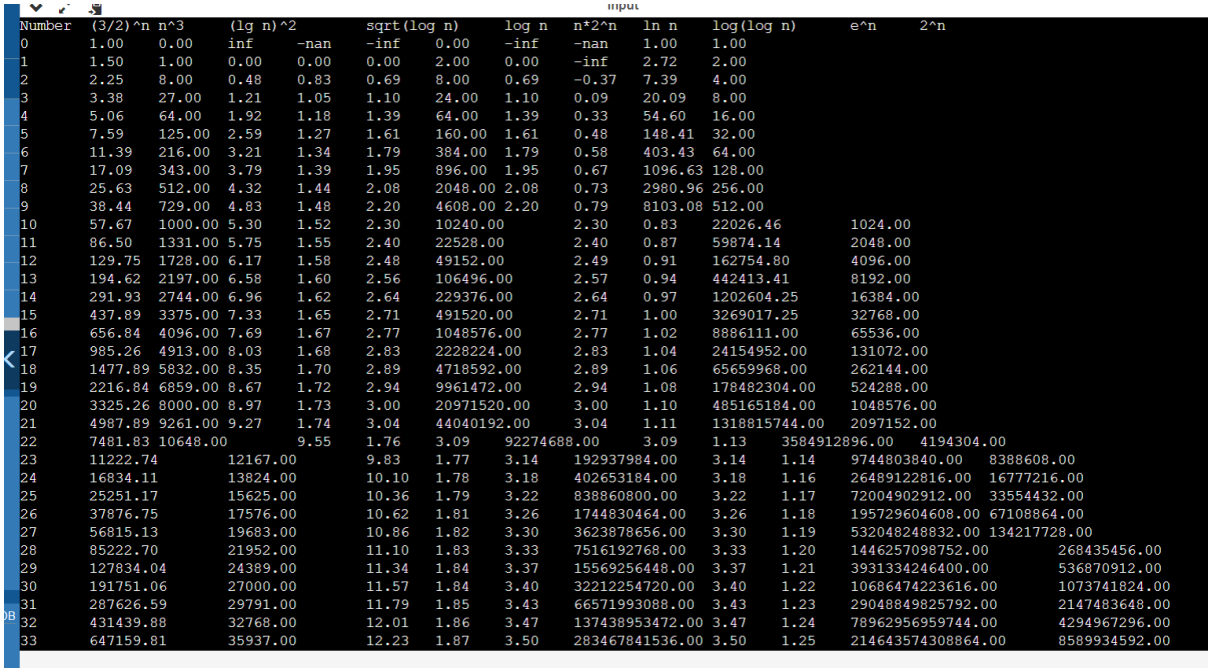
```
float fact(int n)
{
float ans = 1.0;
for (int i = 1; i <= n; i++)
{
ans = ans * i;
}
return ans;
}
int main()
{
printf("Number\t(3/2)^n\tn^3\t(lg n)^2\tsqrt(log n)\tlog n\tn*2^n\tln n\tlog(log n)\te^n\t2^n\n");
for (int i = 0; i <= 100; i++)
{
printf("%d\t%.2f\t%.2f\t%.2f\t%.2f\t%.2f\t%.2f\t%.2f\t%.2f\t%.2f\n", i, power(i), cube(i), logsq(i), powpow(i), loga(i), func(i), logdiv(i),
loga2(i), expo(i), pown(i));
}
printf(" \n Factorial of first 20 numbers\n");
printf("Number\tn!\n");
for (int i = 0; i <= 20; i++)
{
printf("%d\t%.2f", i, fact(i));
```

}

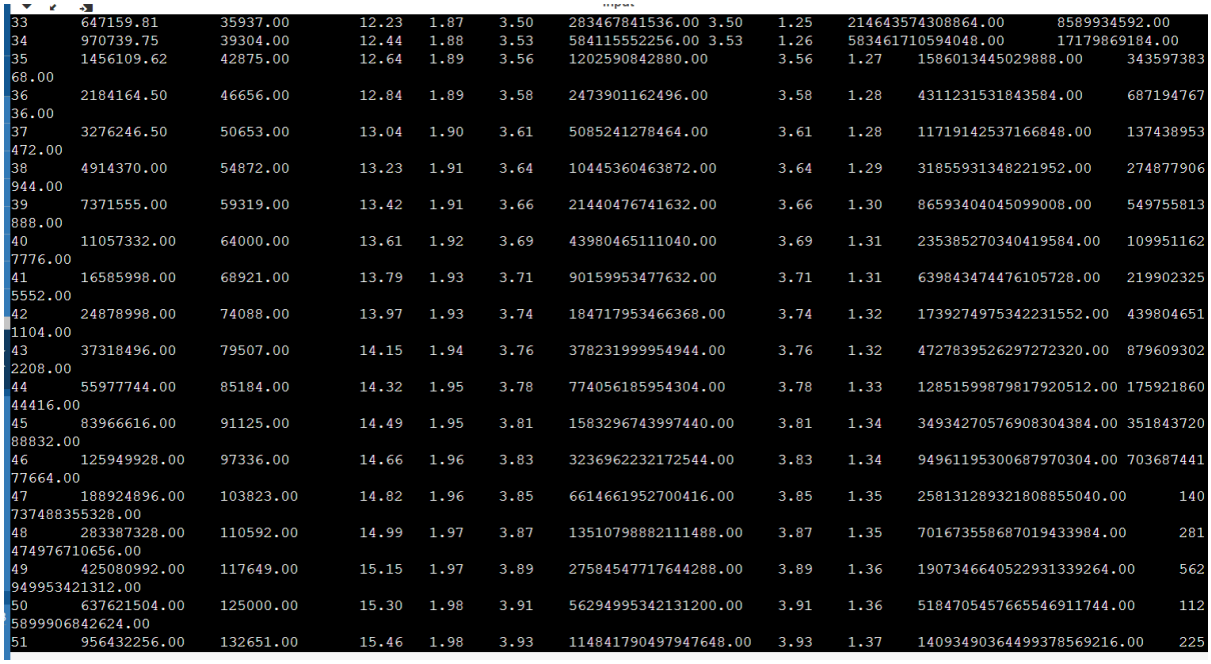
return 0;

}

RESULT:



Number	(3/2)^n	n^3	(lg n)^2		sqrt(log n)	log n	n*2^n	ln n	log(log n)	e^n	2^n
0	1.00	0.00	inf	-nan	-inf	0.00	-inf	-nan	1.00	1.00	
1	1.50	1.00	0.00	0.00	0.00	2.00	0.00	-inf	2.72	2.00	
2	2.25	8.00	0.48	0.83	0.69	8.00	0.69	-0.37	7.39	4.00	
3	3.38	27.00	1.21	1.05	1.10	24.00	1.10	0.09	20.09	8.00	
4	5.06	64.00	1.92	1.18	1.39	64.00	1.39	0.33	54.60	16.00	
5	7.59	125.00	2.59	1.27	1.61	160.00	1.61	0.48	148.41	32.00	
6	11.39	216.00	3.21	1.34	1.79	384.00	1.79	0.58	403.43	64.00	
7	17.09	343.00	3.79	1.39	1.95	896.00	1.95	0.67	1096.63	128.00	
8	25.63	512.00	4.32	1.44	2.08	2048.00	2.08	0.73	2980.96	256.00	
9	38.44	729.00	4.83	1.48	2.20	4608.00	2.20	0.79	8103.08	512.00	
10	57.67	1000.00	5.30	1.52	2.30	10240.00		2.30	0.83	22026.46	1024.00
11	86.50	1331.00	5.75	1.55	2.40	22528.00		2.40	0.87	59874.14	2048.00
12	129.75	1728.00	6.17	1.58	2.48	49152.00		2.49	0.91	162754.80	4096.00
13	194.62	2197.00	6.58	1.60	2.56	106496.00		2.57	0.94	442413.41	8192.00
14	291.93	2744.00	6.96	1.62	2.64	229376.00		2.64	0.97	1202604.25	16384.00
15	437.89	3375.00	7.33	1.65	2.71	491520.00		2.71	1.00	3269017.25	32768.00
16	656.84	4096.00	7.69	1.67	2.77	1048576.00		2.77	1.02	8886111.00	65536.00
17	985.26	4913.00	8.03	1.68	2.83	2228224.00		2.83	1.04	24154952.00	131072.00
18	1477.89	5832.00	8.35	1.70	2.89	4718592.00		2.89	1.06	65659968.00	262144.00
19	2216.84	6859.00	8.67	1.72	2.94	9961472.00		2.94	1.08	178482304.00	524288.00
20	3325.26	8000.00	8.97	1.73	3.00	20971520.00		3.00	1.10	485165184.00	1048576.00
21	4987.89	9261.00	9.27	1.74	3.04	44040192.00		3.04	1.11	1318815744.00	2097152.00
22	7481.83	10648.00		9.55	1.76	3.09	92274688.00		3.09	1.13	3584912896.00	4194304.00
23	11222.74		12167.00		9.83	1.77	3.14	192937984.00		3.14	1.14	9744803840.00	8388608.00
24	16834.11		13824.00		10.10	1.78	3.18	402653184.00		3.18	1.16	26489122816.00	16777216.00
25	25251.17		15625.00		10.36	1.79	3.22	838860800.00		3.22	1.17	72004902912.00	33554432.00
26	37876.75		17576.00		10.62	1.81	3.26	1744830464.00		3.26	1.18	195729604608.00	67108864.00
27	56815.13		19683.00		10.86	1.82	3.30	3623878656.00		3.30	1.19	532048248832.00	134217728.00
28	85222.70		21952.00		11.10	1.83	3.33	7516192768.00		3.33	1.20	1446257098752.00	268435456.00
29	127834.04		24389.00		11.34	1.84	3.37	15569256448.00		3.37	1.21	3931334246400.00	536870912.00
30	191751.06		27000.00		11.57	1.84	3.40	32212254720.00		3.40	1.22	10686474223616.00	1073741824.00
31	287626.59		29791.00		11.79	1.85	3.43	66571993088.00		3.43	1.23	29048849825792.00	2147483648.00
32	431439.88		32768.00		12.01	1.86	3.47	137438953472.00		3.47	1.24	78962956959744.00	4294967296.00
33	647159.81		35937.00		12.23	1.87	3.50	283467841536.00		3.50	1.25	214643574308864.00	8589934592.00



33	647159.81	35937.00	12.23	1.87	3.50	283467841536.00	3.50	1.25	214643574308864.00	8589934592.00
34	970739.75	39304.00	12.44	1.88	3.53	584115552256.00	3.53	1.26	583461710594048.00	17179869184.00
35	1456109.62	42875.00	12.64	1.89	3.56	1202590842880.00		3.56	1.27	1586013445029888.00	34359738368.00
36	2184164.50	46656.00	12.84	1.89	3.58	2473901162496.00		3.58	1.28	4311231531843584.00	68719476736.00
37	3276246.50	50653.00	13.04	1.90	3.61	5085241278464.00		3.61	1.28	11719142537166848.00	137438953472.00
38	4914370.00	54872.00	13.23	1.91	3.64	10445360463872.00		3.64	1.29	31855931348221952.00	274877906944.00
39	7371555.00	59319.00	13.42	1.91	3.66	21440476741632.00		3.66	1.30	86593404045099008.00	549755813888.00
40	11057332.00	64000.00	13.61	1.92	3.69	43980465111040.00		3.69	1.31	235385270340419584.00	1099511627776.00
41	16585998.00	68921.00	13.79	1.93	3.71	90159953477632.00		3.71	1.31	639843474476105728.00	2199023255552.00
42	24878998.00	74088.00	13.97	1.93	3.74	184717953466368.00		3.74	1.32	1739274975342231552.00	4398046511104.00
43	37318496.00	79507.00	14.15	1.94	3.76	378231999954944.00		3.76	1.32	4727839526297272320.00	8796093022208.00
44	55977744.00	85184.00	14.32	1.95	3.78	774056185954304.00		3.78	1.33	12851599879817920512.00	17592186044416.00
45	83966616.00	91125.00	14.49	1.95	3.81	1583296743997440.00		3.81	1.34	34934270576908304384.00	35184372088832.00
46	125949928.00	97336.00	14.66	1.96	3.83	3236962232172544.00		3.83	1.34	94961195300687970304.00	70368744177664.00
47	188924896.00	103823.00	14.82	1.96	3.85	6614661952700416.00		3.85	1.35	258131289321808855040.00	140737488355328.00
48	283387328.00	110592.00	14.99	1.97	3.87	13510798882111488.00		3.87	1.35	701673558687019433984.00	281474976710656.00
49	425080992.00	117649.00	15.15	1.97	3.89	27584547717644288.00		3.89	1.36	1907346640522931339264.00	562949953421312.00
50	637621504.00	125000.00	15.30	1.98	3.91	56294995342131200.00		3.91	1.36	5184705457665546911744.00	1125899906842624.00
51	956432256.00	132651.00	15.46	1.98	3.93	114841790497947648.00		3.93	1.37	14093490364499378569216.00	225

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56	7262907392.00	175616.00	16.20	2.01	4.03	4035225266123964416.00	4.03	1.39	209165944904092118260 1216.00	720	57594037927936.00
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62	82729058304.00	238328.00	17.03	2.03	4.13	285924533142498050048.00	4.13	1.42	843835682327256981972 189184.00	4611	686018427387904.00
63	124093579264.00	250047.00	17.17	2.04	4.14	581072438321850875904.00	4.14	1.42	229378311823411300585 9110912.00	9223	372036854775808.00
64	186140377088.00	262144.00	17.30	2.04	4.16	1180591620717411303424.00	4.16	1.43	623514884175384919873 7883136.00	1844	6744073709551616.00
65	279210557440.00	274625.00	17.43	2.04	4.17	2398076729582241710080.00	4.17	1.43	169488920667567503730 0686848 0.00	3689	348814741903232.00
66	418815836160.00	287496.00	17.55	2.05	4.19	4869940435459321626624.00	4.19	1.43	460718654764250970604 0390451 2.00	7378	697629484832064 64.00
67	628223770624.00	300763.00	17.68	2.05	4.20	9887454823508319666176.00	4.21	1.44	125236318544469040270 3698821 12.00	1475	739525894676412928.00
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776703300500193 28.00	151115727451828646838 272.00										
78	54339821371392.00	474552.00	18.98	2.09	4.36	235740534824852689067 70432.00	4.36	1.47	74984169815783446		
958515529732587 52.00	302231454903657293676 544.00										
79	81509729959936.00	493039.00	19.09	2.09	4.37	477525698747778524008 93952.00	4.37	1.47	20382810254657832		
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88      3133508012736512.00     681472.00       20.05   2.12    4.48    272346808642783660477807329280.00       4.48    1.50    165163626
6136130661637703489096547041280.00      309485009821345068724781056.00
89      4700261884887040.00     704969.00       20.15   2.12    4.49    550883317481994222330110279680.00       4.49    1.50    inf     618
9700196426901374495621120.00
90      7050392827330560.00     729000.00       20.25   2.12    4.50    111414603535684224740921180160000.00   4.50    1.50    inf     123
7940039285380274899124224.00
91      10575589240995840.00    753571.00       20.35   2.12    4.51    225305087149939210031640608768000.00   4.51    1.51    inf     247
5880078570760549798248448.00
92      15863383324622848.00    778688.00       20.45   2.13    4.52    455561934457019941162877144320000.00   4.52    1.51    inf     495
1760157141521099596496896.00
93      23795076597547008.00    804357.00       20.54   2.13    4.53    921027389228322924524948422656000.00   4.53    1.51    inf     990
3520314283042199192993792.00
94      35692612748836864.00    830584.00       20.64   2.13    4.54    186186181908521193344828282832896000.00        4.54    1.51    inf     198
0704062856608439838598758400.00
95      53538919123255296.00    857375.00       20.74   2.13    4.55    376333771942755603569333764096000.00   4.55    1.52    inf     396
1408125713216879677197516800.00
96      80308380832366592.00    884736.00       20.83   2.14    4.56    760590360136937640898021923225600.00   4.56    1.52    inf     792
2816251426433759354395033600.00
97      120462571248549888.00   912673.00       20.93   2.14    4.57    153702635277672814931475263651840000.00        4.58    1.52    inf     158
4563250285286751870879006720.00
98      180693861167792128.00   941192.00       21.02   2.14    4.58    310574397055916203366692285317120000.00        4.59    1.52    inf     316
9126500570573503741758013440.00
99      271040783161753600.00   970299.00       21.12   2.14    4.60    627487047112973553740868086661120000.00        4.60    1.52    inf     633
8253001141147007483516026880.00
100     406561191922499584.00   1000000.00      21.21   2.15    4.61    126765060022822940149670320537600000.00        4.61    1.53    inf     126
7650600228229401496703205376.00

 Factorial of first 20 numbers
Number  n!
0       1.001   1.002   2.003   6.004   24.005  120.006 720.007 5040.008        40320.009       362880.0010     3628800.0011    39916800.
0012  479001600.0013  6227020800.0014 87178289152.0015        1307674279936.0016      20922788478976.0017     355687414628352.0018  64023
73530419200.0019    121645096004222976.0020 2432902023163674624.00

...Program finished with exit code 0
Press ENTER to exit console.
```