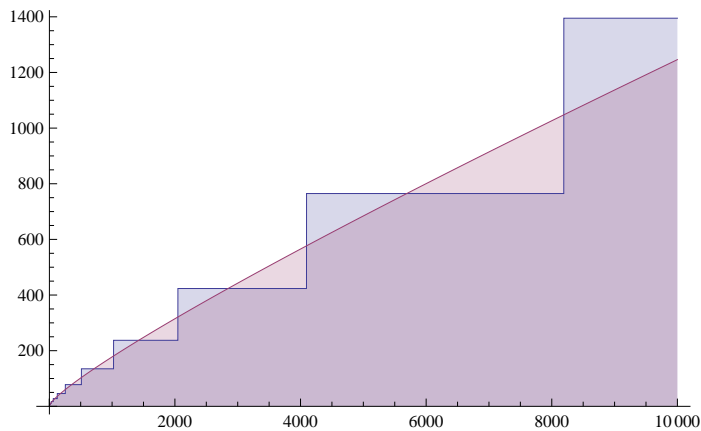


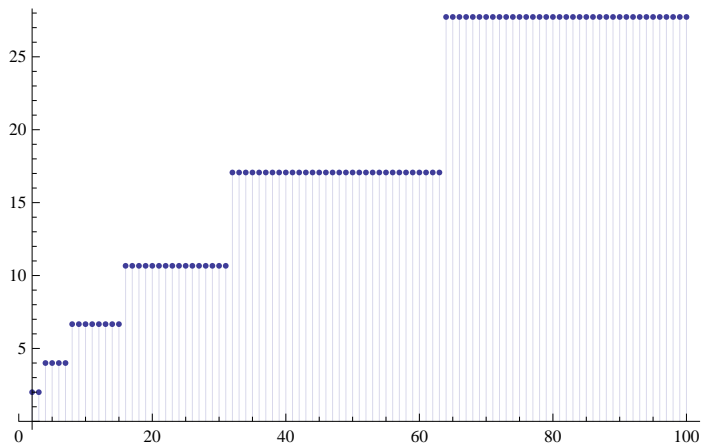
```
ClearAll["Global`*"]
```

```
F1[n_, 1] := F1[n, 1] = Sum[ 2^k / k, {k, 1, Log[2, n]}]
f1[n_, 1] := f1[n, 1] = F1[n, 1] - F1[n - 1, 1]
f1[n_, k_] := f1[n, k] = F1[n, k] - F1[n - 1, k]
f1[1, 0] := 1
F1[n_, 0] := F1[n, 0] = 1
F1[n_, k_] := F1[n, k] = Sum[ f1[j, 1] F1[Floor[n / j], k - 1], {j, 2, n}]
expf[n_] := Sum[ 1 / (k!) f1[n, k], {k, 0, Log[2, n]}]
Ex1[n_, 0] := 1;
Ex1[n_, k_] := Ex1[n, k] = Sum[ expf[j] Ex1[Floor[n / j], k - 1], {j, 1, n}]
ex1[n_, k_] := ex1[n, k] = Ex1[n, k] - Ex1[n - 1, k]
Ex2[n_, k_] := Ex2[n, k] = Sum[ (-1)^j Binomial[k, j] Ex1[n, k - j], {j, 0, k}]
EF2[n_] := Sum[ (-1)^(k + 1) / k Ex2[n, k], {k, 1, Log[2, n]}]
```

```
DiscretePlot[{F1[n, 1], LogIntegral[n]}, {n, 2, 10 000}]
```



```
DiscretePlot[EF2[n], {n, 2, 100}]
```



```
Table[{n, F1[n, 1], EF2[n]}, {n, 1, 100}] // TableForm
```

1	0	0
2	2	2
3	2	2
4	4	4
5	4	4

6	4	4
7	4	4
8	$\frac{20}{3}$	$\frac{20}{3}$
9	$\frac{20}{3}$	$\frac{20}{3}$
10	$\frac{20}{3}$	$\frac{20}{3}$
11	$\frac{20}{3}$	$\frac{20}{3}$
12	$\frac{20}{3}$	$\frac{20}{3}$
13	$\frac{20}{3}$	$\frac{20}{3}$
14	$\frac{20}{3}$	$\frac{20}{3}$
15	$\frac{20}{3}$	$\frac{20}{3}$
16	$\frac{32}{3}$	$\frac{32}{3}$
17	$\frac{32}{3}$	$\frac{32}{3}$
18	$\frac{32}{3}$	$\frac{32}{3}$
19	$\frac{32}{3}$	$\frac{32}{3}$
20	$\frac{32}{3}$	$\frac{32}{3}$
21	$\frac{32}{3}$	$\frac{32}{3}$
22	$\frac{32}{3}$	$\frac{32}{3}$
23	$\frac{32}{3}$	$\frac{32}{3}$
24	$\frac{32}{3}$	$\frac{32}{3}$
25	$\frac{32}{3}$	$\frac{32}{3}$
26	$\frac{32}{3}$	$\frac{32}{3}$
27	$\frac{32}{3}$	$\frac{32}{3}$
28	$\frac{32}{3}$	$\frac{32}{3}$
29	$\frac{32}{3}$	$\frac{32}{3}$
30	$\frac{32}{3}$	$\frac{32}{3}$
31	$\frac{32}{3}$	$\frac{32}{3}$
32	$\frac{256}{15}$	$\frac{256}{15}$
33	$\frac{256}{15}$	$\frac{256}{15}$
34	$\frac{256}{15}$	$\frac{256}{15}$
35	$\frac{256}{15}$	$\frac{256}{15}$
36	$\frac{256}{15}$	$\frac{256}{15}$
37	$\frac{256}{15}$	$\frac{256}{15}$
38	$\frac{256}{15}$	$\frac{256}{15}$
39	$\frac{256}{15}$	$\frac{256}{15}$
40	$\frac{256}{15}$	$\frac{256}{15}$
41	$\frac{256}{15}$	$\frac{256}{15}$
42	$\frac{256}{15}$	$\frac{256}{15}$
43	$\frac{256}{15}$	$\frac{256}{15}$
44	$\frac{256}{15}$	$\frac{256}{15}$

	--	--
45	<u>256</u>	<u>256</u>
	15	15
46	<u>256</u>	<u>256</u>
	15	15
47	<u>256</u>	<u>256</u>
	15	15
48	<u>256</u>	<u>256</u>
	15	15
49	<u>256</u>	<u>256</u>
	15	15
50	<u>256</u>	<u>256</u>
	15	15
51	<u>256</u>	<u>256</u>
	15	15
52	<u>256</u>	<u>256</u>
	15	15
53	<u>256</u>	<u>256</u>
	15	15
54	<u>256</u>	<u>256</u>
	15	15
55	<u>256</u>	<u>256</u>
	15	15
56	<u>256</u>	<u>256</u>
	15	15
57	<u>256</u>	<u>256</u>
	15	15
58	<u>256</u>	<u>256</u>
	15	15
59	<u>256</u>	<u>256</u>
	15	15
60	<u>256</u>	<u>256</u>
	15	15
61	<u>256</u>	<u>256</u>
	15	15
62	<u>256</u>	<u>256</u>
	15	15
63	<u>256</u>	<u>256</u>
	15	15
64	<u>416</u>	<u>416</u>
	15	15
65	<u>416</u>	<u>416</u>
	15	15
66	<u>416</u>	<u>416</u>
	15	15
67	<u>416</u>	<u>416</u>
	15	15
68	<u>416</u>	<u>416</u>
	15	15
69	<u>416</u>	<u>416</u>
	15	15
70	<u>416</u>	<u>416</u>
	15	15
71	<u>416</u>	<u>416</u>
	15	15
72	<u>416</u>	<u>416</u>
	15	15
73	<u>416</u>	<u>416</u>
	15	15
74	<u>416</u>	<u>416</u>
	15	15
75	<u>416</u>	<u>416</u>
	15	15
76	<u>416</u>	<u>416</u>
	15	15
77	<u>416</u>	<u>416</u>
	15	15
78	<u>416</u>	<u>416</u>
	15	15
79	<u>416</u>	<u>416</u>
	15	15
80	<u>416</u>	<u>416</u>
	15	15
81	<u>416</u>	<u>416</u>
	15	15
82	<u>416</u>	<u>416</u>
	15	15
83	<u>416</u>	<u>416</u>
	15	15

	--	--
84	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
85	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
86	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
87	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
88	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
89	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
90	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
91	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
92	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
93	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
94	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
95	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
96	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
97	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
98	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
99	$\frac{416}{15}$	$\frac{416}{15}$
	$\frac{416}{15}$	$\frac{416}{15}$
100	$\frac{416}{15}$	$\frac{416}{15}$

f1[1, 0]

1

expf[1]

1

Ex1[1, 1]

1

Table[{n, Ex2[n, 1], Ex2[n, 2], Ex2[n, 3]}, {n, 1, 100}] // TableForm

1	0	0	0
2	2	0	0
3	2	0	0
4	6	4	0
5	6	4	0
6	6	4	0
7	6	4	0
8	14	20	8
9	14	20	8
10	14	20	8
11	14	20	8
12	14	20	8
13	14	20	8
14	14	20	8
15	14	20	8
16	30	68	56
17	30	68	56
18	30	68	56
19	30	68	56
20	30	68	56

21	30	68	56
22	30	68	56
23	30	68	56
24	30	68	56
25	30	68	56
26	30	68	56
27	30	68	56
28	30	68	56
29	30	68	56
30	30	68	56
31	30	68	56
32	62	196	248
33	62	196	248
34	62	196	248
35	62	196	248
36	62	196	248
37	62	196	248
38	62	196	248
39	62	196	248
40	62	196	248
41	62	196	248
42	62	196	248
43	62	196	248
44	62	196	248
45	62	196	248
46	62	196	248
47	62	196	248
48	62	196	248
49	62	196	248
50	62	196	248
51	62	196	248
52	62	196	248
53	62	196	248
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55	62	196	248
56	62	196	248
57	62	196	248
58	62	196	248
59	62	196	248
60	62	196	248
61	62	196	248
62	62	196	248
63	62	196	248
64	126	516	888
65	126	516	888
66	126	516	888
67	126	516	888
68	126	516	888
69	126	516	888
70	126	516	888
71	126	516	888
72	126	516	888
73	126	516	888
74	126	516	888
75	126	516	888
76	126	516	888

77	126	516	888
78	126	516	888
79	126	516	888
80	126	516	888
81	126	516	888
82	126	516	888
83	126	516	888
84	126	516	888
85	126	516	888
86	126	516	888
87	126	516	888
88	126	516	888
89	126	516	888
90	126	516	888
91	126	516	888
92	126	516	888
93	126	516	888
94	126	516	888
95	126	516	888
96	126	516	888
97	126	516	888
98	126	516	888
99	126	516	888
100	126	516	888