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

```
vv := 2
K[n_] := If[ n == 1, 0, FullSimplify[MangoldtLambda[n] / Log[n]]]
K2[n_] := If[K[n] == 0, 0, K[n] (-1)^(1 + 1 / K[n])]
K5[n_] := K[n] (1 - If[ Mod[n, vv] == 0, n, 0])
K6[n_] := K2[n] - If[ Floor[Log[vv, n]] == Log[vv, n], n / Log[vv, n], 0]
P[n_, 0] = 1;
P[n_, k_] := P[n, k] = Sum[ K6[j] P[Floor[n / j], k - 1], {j, 2, n}]
En[n_] := En[n] = Sum[ 1 / (k!) P[n, k], {k, 0, Log[2, n]}]
En2[n_] := En2[n] = Sum[ (-1)^(k) 1 / (k!) P[n, k], {k, 0, Log[2, n]}]
En[n_, z_] := En[n, z] = Sum[ (z^k) / (k!) P[n, k], {k, 0, Log[2, n]}]
En2[n_, z_] := En2[n, z] = Sum[ ((-z)^k) / (k!) P[n, k], {k, 0, Log[2, n]}]
en[n_] := En[n] - En[n - 1]
LAdd2[n_] := Sum[ vv^k / k, {k, 1, Log[vv, n]}]
PP[n_, k_] := PP[n, k] = Sum[ 1 / k - PP[Floor[n / j], k + 1], {j, 2, n}]
P2[n_] := Sum[ K2[j], {j, 1, n}]
```

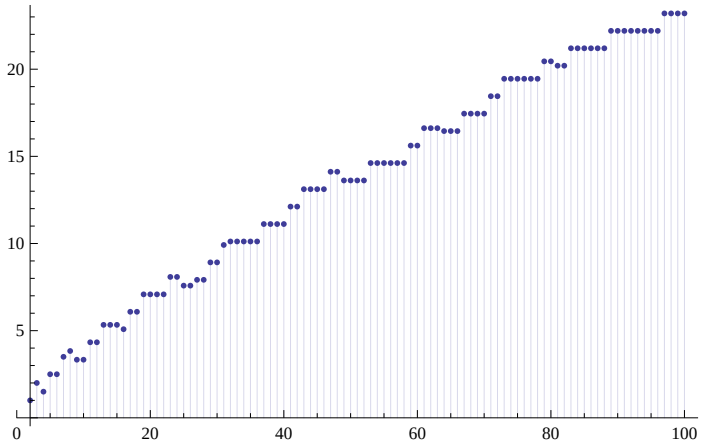
```
K2[2]
```

```
1
```

```
P[100, 1] - LAdd2[100]
```

$$-\frac{484}{15}$$

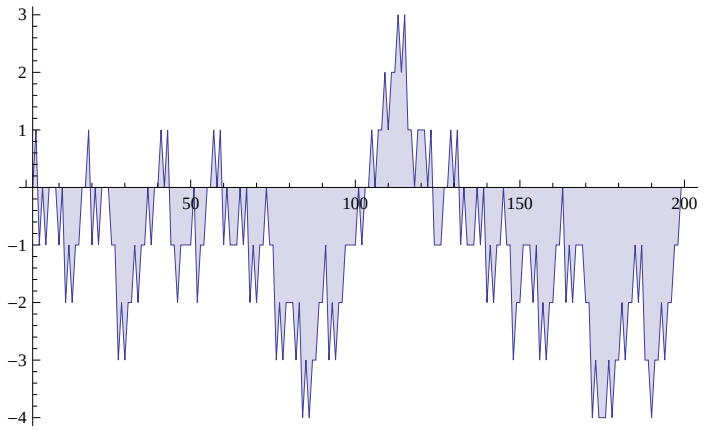
```
DiscretePlot[{P[n, 1] + LAdd2[n]}, {n, 2, 100}]
```



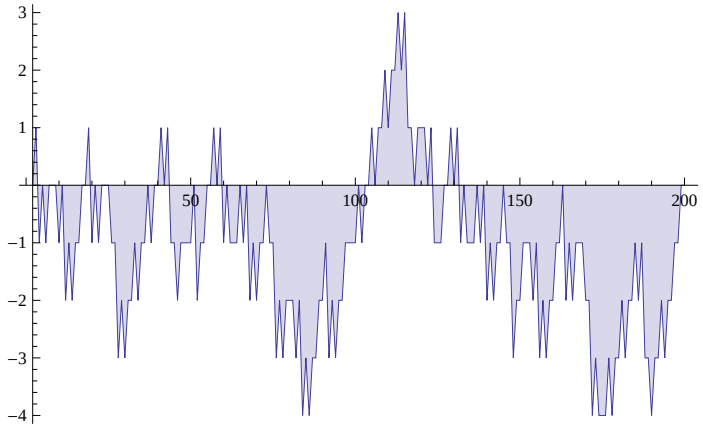
```
Table[{n, en[n]}, {n, 2, 50}] // TableForm
```

2	1
3	1
4	1
5	−4
6	1
7	−6
8	1
9	1
10	−4
11	1
12	1
13	1
14	−6
15	−4
16	1
17	1
18	1
19	1
20	−4
21	−6
22	1
23	1
24	1
25	−4
26	1
27	1
28	−6
29	1
30	−4
31	1
32	1
33	1
34	1
35	24
36	1
37	1
38	1
39	1
40	−4
41	1
42	−6
43	1
44	1
45	−4
46	1
47	1
48	1
49	−6
50	−4

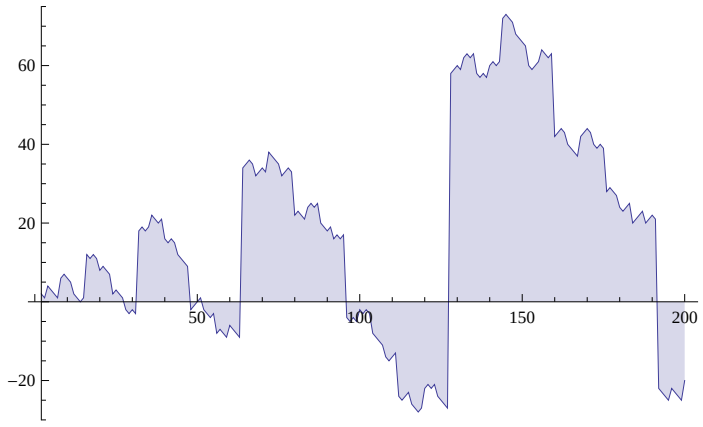
```
DiscretePlot[En[n], {n, 2, 200}]
```




```
DiscretePlot[En[n, 1], {n, 2, 200}]
```




```
DiscretePlot[En2[n], {n, 2, 200}]
```



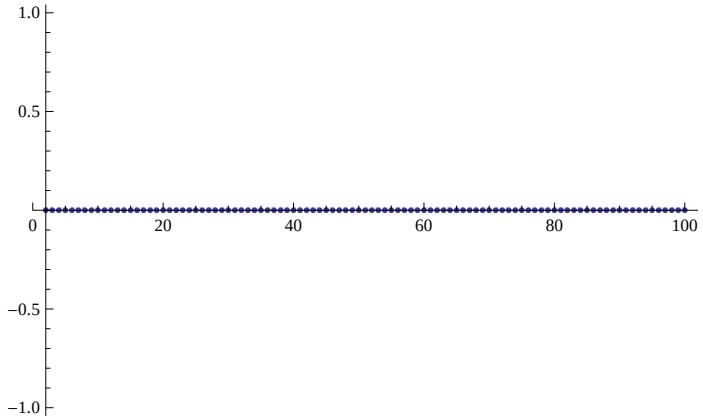

```
Table[ {n, En[n], Mod[n, vv]}, {n, 1, 100}] // TableForm
```

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

6	1	6
7	−5	0
8	−4	1
9	−3	2
10	−7	3
11	−6	4
12	−5	5
13	−4	6
14	−10	0
15	−14	1
16	−13	2
17	−12	3
18	−11	4
19	−10	5
20	−14	6
21	−20	0
22	−19	1
23	−18	2
24	−17	3
25	−21	4
26	−20	5
27	−19	6
28	−25	0
29	−24	1
30	−28	2
31	−27	3
32	−26	4
33	−25	5
34	−24	6
35	0	0
36	1	1
37	2	2
38	3	3
39	4	4
40	0	5
41	1	6
42	−5	0
43	−4	1
44	−3	2
45	−7	3
46	−6	4
47	−5	5
48	−4	6
49	−10	0
50	−14	1
51	−13	2
52	−12	3
53	−11	4
54	−10	5
55	−14	6
56	−20	0
57	−19	1
58	−18	2
59	−17	3
60	−21	4
61	−20	5

```
62    -19   6
63    -25   0
64    -24   1
65    -28   2
66    -27   3
67    -26   4
68    -25   5
69    -24   6
70    0     0
71    1     1
72    2     2
73    3     3
74    4     4
75    0     5
76    1     6
77    -5    0
78    -4    1
79    -3    2
80    -7    3
81    -6    4
82    -5    5
83    -4    6
84    -10   0
85    -14   1
86    -13   2
87    -12   3
88    -11   4
89    -10   5
90    -14   6
91    -20   0
92    -19   1
93    -18   2
94    -17   3
95    -21   4
96    -20   5
97    -19   6
98    -25   0
99    -24   1
100   -28   2
```

```
DiscretePlot[P[n, 1] - PP[n, 1] + LAdd[n] + LAdda[n], {n, 2, 100}]
```




```
Table[{n, (P[n, 1] - P2[n]) - (P[n - 1, 1] - P2[n - 1])}, {n, 2, 100}] // TableForm
```

2	-2
3	0
4	-2
5	0
6	0
7	0
8	$-\frac{8}{3}$
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	-4
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	0
32	$-\frac{32}{5}$
33	0
34	0

35	0
36	0
37	0
38	0
39	0
40	0
41	0
42	0
43	0
44	0
45	0
46	0
47	0
48	0
49	0
50	0
51	0
52	0
53	0
54	0
55	0
56	0
57	0
58	0
59	0
60	0
61	0
62	0
63	0
64	$-\frac{32}{3}$
65	0
66	0
67	0
68	0
69	0
70	0
71	0
72	0
73	0
74	0
75	0
76	0
77	0
78	0
79	0
80	0
81	0
82	0
83	0
84	0
85	0
86	0
87	0
88	0
89	0
90	0

```
91    0
92    0
93    0
94    0
95    0
96    0
97    0
98    0
99    0
100   0
```