

```

D1[z_] := Grid[Table[ Binomial[z + j - 1, z - 1] z^k / k!, {j, 0, 7}, {k, 0, 7}]]
D1a[z2_] :=
  Grid[Table[ Limit[Binomial[z + j - 1, z - 1] z^k / k! / z, z -> z2], {j, 0, 7}, {k, 0, 7}]]

K[n_, k_] :=
  K[n, k] = Sum[ FullSimplify[MangoldtLambda[j] / Log[j]] K[Floor[n / j], k - 1], {j, 2, n}];
K[n_, 0] := 1

E2a[n_, k_, a_] :=
  E2a[n, k, a] = Sum[ E2a[n / j, k - 1, a], {j, 2, n}] - a Sum[ E2a[n / (a j), k - 1, a], {j, 1, n / a}];
E2a[n_, 0, a_] := 1
EP2[n_, a_, b_] :=
  EP2[n, a, b] = Sum[SeriesCoefficient[Series[(Log[x + 1])^a, {x, 0, 230}], k] E2a[n, k, b],
    {k, 1, Log[If[b > 2, 2, b], n]}]; EP2[n_, 0, b_] := 1
D1[n_, a_, b_] := Sum[ Binomial[a + j - 1, a - 1] b^j a^k / k! EP2[n / b^j, k, b],
  {j, 0, Log[b, n]}, {k, 0, Log[If[b > 2, 2, b], n / b^j]}]
D1a[n_, a_, b_] := Grid[Table[ Binomial[a + j - 1, a - 1] b^j a^k / k! EP[n / b^j, k, b],
  {j, 0, Log[b, n]}, {k, 0, Log[If[b > 2, 2, b], n / b^j]}]]
D1b[n_, a2_, b_] := Grid[Table[ Limit[Binomial[a + j - 1, a - 1] b^j a^k / k!
  EP[n / b^j, k, b] / a, a -> a2], {j, 0, Log[b, n]}, {k, 0, Log[If[b > 2, 2, b], n / b^j]}]]
D1c[n_, a_, b_] := Grid[Table[ Binomial[a + j - 1, a - 1] b^j a^k / k! EP2[n / b^j, k, b],
  {j, 0, Log[b, n]}, {k, 0, Log[If[b > 2, 2, b], n / b^j]}]]

```

[illegible][illegible]

D1a[0]

```

∞ 1 0 0 0 0 0 0
1 0 0 0 0 0 0 0
1/2 0 0 0 0 0 0 0
1/3 0 0 0 0 0 0 0
1/4 0 0 0 0 0 0 0
1/5 0 0 0 0 0 0 0
1/6 0 0 0 0 0 0 0
1/7 0 0 0 0 0 0 0

```

D1a[100, 1, 2]

```

EP[100, 0, 2]      EP[100, 1, 2]      1/2 EP[100, 2, 2]      1/6 EP[100, 3, 2]      1/24 EP[100, 4, 2]      1/120 EP[100, 5, 2]      1/720 EP[100, 6, 2]
2 EP[50, 0, 2]      2 EP[50, 1, 2]      EP[50, 2, 2]      1/3 EP[50, 3, 2]      1/12 EP[50, 4, 2]      1/60 EP[50, 5, 2]
4 EP[25, 0, 2]      4 EP[25, 1, 2]      2 EP[25, 2, 2]      2/3 EP[25, 3, 2]      1/6 EP[25, 4, 2]
8 EP[25/2, 0, 2]    8 EP[25/2, 1, 2]    4 EP[25/2, 2, 2]    4/3 EP[25/2, 3, 2]
16 EP[25/4, 0, 2]   16 EP[25/4, 1, 2]   8 EP[25/4, 2, 2]
32 EP[25/8, 0, 2]   32 EP[25/8, 1, 2]
64 EP[25/16, 0, 2]

```

\$RecursionLimit = 10 000

10 000

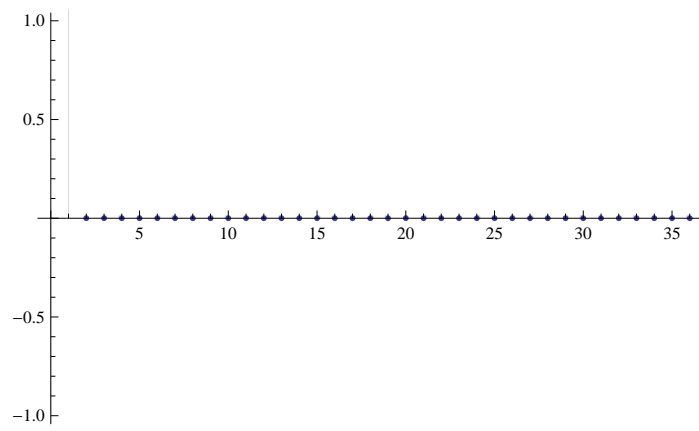
dra[n_, k_, b_] :=

```

DiscretePlot[Sum[Binomial[k + j - 1, k - 1] b^j FactorialPower[-k, a] / a! EP2[n / b^j, a, b],
{a, 0, Log[If[b > 2, 2, b], n / b^j]}], {j, 0, Log[b, n]}]

```

```
dra[6, -1, 1.05]
```



```
D1[100, -1, 1.3]
```

```
1.
```