

```

K[n_] := If[n == 1, 0, FullSimplify[MangoldtLambda[n] / Log[n]]]
P[n_, k_] := P[n, k] = Sum[K[j] P[Floor[n / j], k - 1], {j, 2, n}]; P[n_, 0] := 1
Dd[n_, z_] := Sum[z^k / k! P[n, k], {k, 0, Log[2, n]}]
Rd[n_] := Rd[n] = List@@NRoots[Dd[n, x] == 0, x][[All, 2]]
Dp[n_, z_] := Product[1 - z / k, {k, Rd[n]}]

```

```
Rd[100]
```

```

{-11.1997 - 12.3982 i, -11.1997 + 12.3982 i,
 -2.67195 - 1.86184 i, -2.67195 + 1.86184 i, -0.933809, -0.0372047}

```

```
Sum[-1 / k, {k, Rd[100]}]
```

```
28.5333 + 0. i
```

```
Dp[100, 1]
```

```
100. + 1.77636 × 10-15 i
```

```
Dp[100, 2]
```

```
482. + 2.84217 × 10-14 i
```

```
Dp[100, 3]
```

```
1471. + 1.13687 × 10-13 i
```

```
Dp[100, -1]
```

```
1. + 2.77556 × 10-17 i
```

```
RootLocusPlot[1 / Dd[96, x], {k, 0, 1}]
```

