```
L[n_, 0] := 1
L[n_, 1] := L[n, 1] = Sum[Log[j], {j, 2, n}]
L[n_, k_] := L[n, k] = Sum[L[Floor[n / j], k - 1], {j, 2, n}]
bins[z_, a_] := Product[(z - k), {k, 0, a - 1}] / a!
ll[n_, z_] := N[Sum[bins[z, k] L[n, k], {k, 0, Log[2, n]}]]
zeros[n_] := zeros[n] = List @@ NRoots[ll[n, z] == 0, z][[All, 2]]
zs[n_] := zs[n] = List @@ NRoots[ll[n, z] == 0, z][[All, 2]]
lp[n_] := 1 - Product[1 + 1 / r, {r, zs[n]}]
```

```
N[1 - ll[100, -1]]
```

```
94.0453
```

```
zs[100]
```

```
{-12.9799 - 15.0426 i, -12.9799 + 15.0426 i, -3.66756,
 -3.06482 - 2.95324 i, -3.06482 + 2.95324 i, -0.00522175}
```

```
colfunc = ColorData["AvocadoColors"]; aa = 1000; bb = 1000;
pts = Table[{colfunc[(n - aa) / bb], Point[{Re[#], Im[#]}]} & /@ zs[n], {n, aa, aa + bb}];
Graphics[pts, Frame → True, PlotRange → {{-60, 0}, {-20, 20}}]
```