```
D2[n_, k_] := D2[n, k] = Sum[D2[Floor[n / j], k - 1], {j, 2, n}]; D2[n_, 0] := 1
W[n_, z_] := Sum[ z^k / k ! D2[n, k], {k, 0, Log[2, n]}]
W1c[n_, z_] := Expand[FullSimplify[(W[n, z + 1] - 1) / (z + 1)]]
```

```
N[W[100, 1]]
```

```
303.601
```

```
D[W[100, z], z]
```

$$99 + 283\,z + 162\,z^2 + \frac{92\,z^3}{3} + \frac{17\,z^4}{8} + \frac{7\,z^5}{120}$$

```
(-1 / List @@ NRoots[ W[100, x] == 0, x][[All, 2]])
```

```
{0.0419569 - 0.0288556 i, 0.0419569 + 0.0288556 i, 0.153113, 0.266745, 0.941024, 97.5552}
```

```
(List @@ NRoots[ W1c[100, x] == 0, x][[All, 2]])
```

```
{-17.1806 - 11.1282 i, -17.1806 + 11.1282 i, -7.53589, -4.73565, -2.08145}
```

```
vv := {-16.180664022748342` - 11.128144038617982` i,
  -16.180664022748342` + 11.128144038617982` i, -6.5311297858146515`,
  -3.7489048140480477`, -1.0626724626158177`, -0.010250606310515099`}
```

```
Sum[ -1 / j, {j, vv}]
```

```
99. + 0. i
```

```
vv2 := {-17.18064807919592` - 11.128192517858471` i,
  -17.18064807919592` + 11.128192517858471` i,
  -7.535894740890104`, -4.735647625732084`, -2.081447189271695`}
```

```
Product[1 - 1 / j, {j, vv2}]
```

```
2.20238 + 0. i
```

```
RootLocusPlot[1 / Expand[W[100, x]], {k, 0, 1}, FeedbackType → None]
```