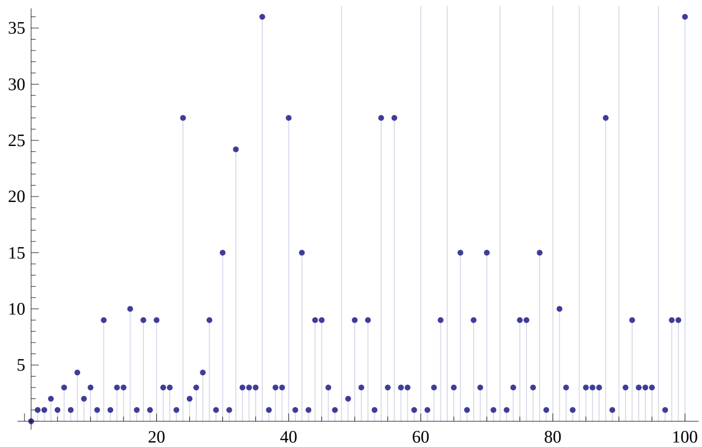
```
PS[n_] := PS[n] = FullSimplify[MangoldtLambda[ n] / Log[n]]
DD[n_, k_, a_] :=  DD[n, k, a] = Sum[ PS[j] (a^k / k! + DD[n / j, k + 1, a]), {j, 2, n}]
Dd[ n_, a_ ] := Dd[n, a] = DD[n, 1, a] - DD[n - 1, 1, a]
D2[n_, k_] := Sum[ D2[n / j, k - 1], {j, 2, n}]
D2[n_, 0] := 1
Dd2[ n_, k_] := D2[n, k] - D2[n - 1, k]
```

```
DiscretePlot[PPS[n, -2] - PPS[n - 1, -2], {n, 100}]
```

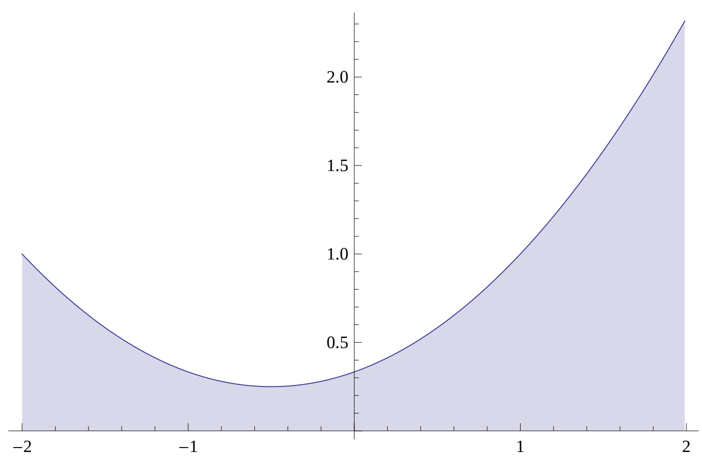



```
PSA[n_, a_ ] := PPS[n, a] - PPS[n - 1, a]
```

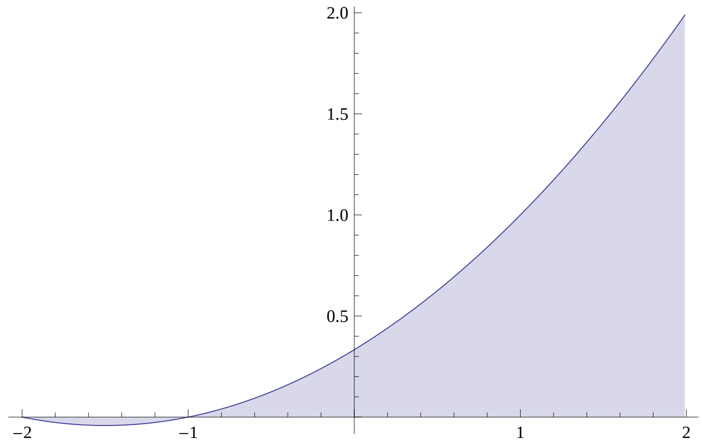
```
PSA[30, 1]
```

```
0
```

```
DiscretePlot[PSA[8, -j + 1] , {j, -2 + .0000001, 2, .01}]
```



```
DiscretePlot[Dd[8, j] / j , {j, -2 + .0000001, 2, .01}]
```




```
PPR[n_, k_, a_] := PPR[n, k, a] = Sum[a (1 / k - PPR[n / j, k + 1, a]), {j, 2, n}]
PPS[n_, a_] := PPR[n, 1, a] / a
```

```
DiscretePlot[Re[PPS[46, 1 + I (-221.001 + 422 * (n / 100))]] , {n, 100}]
```