```
add[n_, j_] := n - j
mul[n_, j_] := n / (j + 1)
nop[n_, j_] := n
f[n_, k_, d_, fn_] :=
 f[n, k, d, fn] = Sum[ d f[fn[n, d j], k - 1, d, fn], {j, 1, Floor[(n - 1) / d]}]
f[n_, 0, d_, fn_] := UnitStep[n]
```

```
f[4, 3, .005, mul]
```

```
1.27947
```

```
N[(-1)^(k) Gamma[k, 0, -Log[x]] / Gamma[k] /. k → 3 /. x → 4]
```

```
1.29845 - 4.77042 × 10^-16 i
```

```
f[14, 3, .005, nop]
```

```
2197.
```

```
Limit[f[n, k, d, add], d → 0]
```

```
$RecursionLimit::reclim : Recursion depth of 256 exceeded. ≫

$RecursionLimit::reclim : Recursion depth of 256 exceeded. ≫

$RecursionLimit::reclim : Recursion depth of 256 exceeded. ≫

General::stop : Further output of $RecursionLimit::reclim will be suppressed during this calculation. ≫

$IterationLimit::itlim : Iteration limit of 4096 exceeded. ≫

$IterationLimit::itlim : Iteration limit of 4096 exceeded. ≫

$IterationLimit::itlim : Iteration limit of 4096 exceeded. ≫

General::stop : Further output of $IterationLimit::itlim will be suppressed during this calculation. ≫
```