```
-PolyLog[2, -500]
```

$$-\text{PolyLog}[2, -500]$$

```
N[-PolyLog[2, -500]]
```

$$20.9536$$

```
E^(PolyLog[1, 4 * 7])
```

$$-\frac{1}{27}$$

```
PolyLog[1, n]
```

$$-\text{Log}[1 - n]$$

```
E^(-Log[1 - 4 * 7])
```

$$-\frac{1}{27}$$

```
Sum[x^k / (k^1), {k, 1, Infinity}]
```

$$-\text{Log}[1 - x]$$

```
Sum[x^k / (k^0), {k, 1, Infinity}]
```

$$-\frac{x}{-1 + x}$$

```
Sum[x^k / (k^2), {k, 1, Infinity}]
```

$$\text{PolyLog}[2, x]$$

```
Sum[(-1)^(k + 1) x^k / (k^0), {k, 1, Infinity}]
```

$$\frac{x}{1 + x}$$

```
Sum[(-1)^(k + 1) x^k / (k^1), {k, 1, Infinity}]
```

$$\text{Log}[1 + x]$$

```
Sum[(-1)^(k + 1) x^k / (k^2), {k, 1, Infinity}]
```

$$-\text{PolyLog}[2, -x]$$

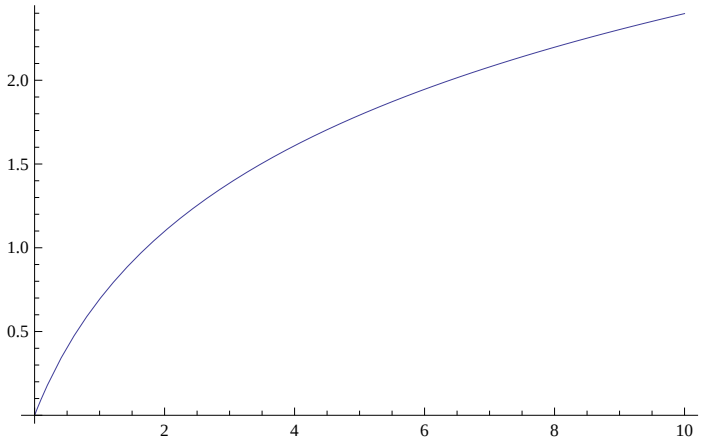
```
N[-PolyLog[1, -500]]
```

$$6.21661$$

```
N[Log[1 + 500]]
```

$$6.21661$$

```
Plot[-PolyLog[1, -x], {x, 0, 10}]
```




```
-PolyLog[1, -500]
```

```
Sum[(-1)^(k+1) (x-1)^k / (k^1), {k, 1, Infinity}]
```

```
Log[x]
```

```
Sum[(-1)^(k+1) ((x y)-1)^k / (k^1), {k, 1, Infinity}]
```

```
Log[x y]
```

```
-PolyLog[1, 1-x]
```

```
Log[x]
```

```
-PolyLog[0, 1-x]
```

$$-\frac{1-x}{x}$$

```
-PolyLog[0, 1-y]
```

$$-\frac{1-y}{y}$$

```
-PolyLog[0, 1-(x y)]
```

$$-\frac{1-x\,y}{x\,y}$$

```
a+b
```

```
a + b
```

```
E^(-PolyLog[1, 1-(a b)])
```

```
a b
```

```
-PolyLog[1, 1-(a b)]
```

```
E^Log[a b]
```

```
a b
```

```
E^(-PolyLog[1, 1-a] - PolyLog[1, 1-b])
```

```
a b
```

```
E^(-PolyLog[1, 1 - a] - PolyLog[1, 1 - b])
```

a b

```
E^(-PolyLog[0, 1 - a] - PolyLog[0, 1 - b])
```

$$e^{-\frac{1-a}{a}-\frac{1-b}{b}}$$

```
-PolyLog[0, 1 - a] - PolyLog[0, 1 - b]
```

$$-\frac{1-a}{a}-\frac{1-b}{b}$$

```
-PolyLog[0, 1 - a b]
```

$$-\frac{1-a\,b}{a\,b}$$

```
Log[E^(a + b)]
```

$$\text{Log}\left[e^{a+b}\right]$$

```
Log[e^(x+y)]
```

$$\text{Log}\left[e^{x+y}\right]$$

a b

a b

```
E^(Log[a] + Log[b])
```

a b

```
coes = {1, 0.25, 0.013888888888888895, 0.0017361111111111188, -0.00035879629629629196,
  0.00014371141975308226, -0.00005917278176703649, 0.00002575358606018921,
  -0.00001167873007149307, 0.00000547020559114695 8, -0.00000262980985864340 85,
  0.00000129162486553252 49, -6.458162962094666 × 10^-7, 3.278363479153308 × 10^-7,
  -1.6859535517755626 × 10^-7, 8.768478486826604 × 10^-8, -4.605557343857223 × 10^-8,
  2.4401456441395295 × 10^-8, -1.3028809990357962 × 10^-8, 7.0047907395136635 × 10^-9}
```

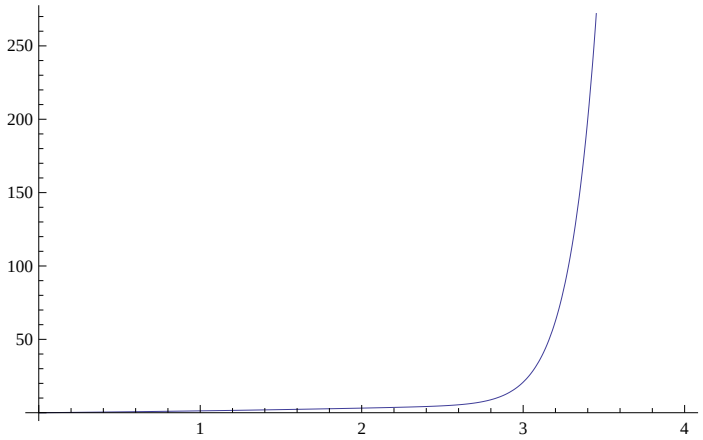
$$\{1, 0.25, 0.0138889, 0.00173611, -0.000358796, 0.000143711, -0.0000591728, 0.0000257536, -0.0000116787, 5.47021\times10^{-6}, -2.62981\times10^{-6}, 1.29162\times10^{-6}, -6.45816\times10^{-7}, 3.27836\times10^{-7}, -1.68595\times10^{-7}, 8.76848\times10^{-8}, -4.60556\times10^{-8}, 2.44015\times10^{-8}, -1.30288\times10^{-8}, 7.00479\times10^{-9}\}$$

```
{1, 0.25`, 0.013888888888888895`, 0.0017361111111111188`, -0.00035879629629629196`,
 0.00014371141975308226`, -0.00005917278176703649`, 0.00002575358606018921`,
 -0.00001167873007149307`, 5.470205591146958`*^-6, -2.6298098586434085`*^-6,
 1.2916248655325249`*^-6, -7 - 64.58162962094666` x, -7 + 32.783634791533075` x,
 -7 - 16.859535517755624` x, -8 + 87.68478486826604` x, -8 - 46.055573438572225` x,
 -8 + 24.401456441395297` x, -8 - 13.028809990357962` x, -9 + 70.04790739513663` x}
```

$$\{1, 0.25, 0.0138889, 0.00173611, -0.000358796, 0.000143711, -0.0000591728, 0.0000257536, -0.0000116787, 5.47021\times10^{-6}, -2.62981\times10^{-6}, 1.29162\times10^{-6}, -7 - 64.5816\,x, -7 + 32.7836\,x, -7 - 16.8595\,x, -8 + 87.6848\,x, -8 - 46.0556\,x, -8 + 24.4015\,x, -8 - 13.0288\,x, -9 + 70.0479\,x\}$$

```
F[n_] := Sum[coes[[k]] n^k, {k, 1, 20}]
```

```
Plot[ F[n], {n, 0, 4}]
```




```
coes[[1]]
```

```
1
```

```
cc = Table[2 x, {x, 1, 10}]
```

```
{2, 4, 6, 8, 10, 12, 14, 16, 18, 20}
```

```
cc (0)
```

```
{0, 0, 0, 0, 0, 0, 0, 0, 0, 0}
```

```
coes[[21]]
```

```
Part::partw : Part 21 of
    {1, 0.25, 0.0138889, 0.00173611, -0.000358796, 0.000143711, -0.0000591728, ≪6≫, -7 + 3.27836 e, -7 -
      1.68595 e, -8 + 8.76848 e, -8 - 4.60556 e, -8 + 2.44015 e, -8 - 1.30288 e, -9 + 7.00479 e}
    does not exist. ≫
```

$$\{1, 0.25, 0.0138889, 0.00173611, -0.000358796, 0.000143711, -0.0000591728, 0.0000257536, -0.0000116787, 5.47021 \times 10^{-6}, -2.62981 \times 10^{-6}, 1.29162 \times 10^{-6}, -7 - 6.45816\, e, -7 + 3.27836\, e, -7 - 1.68595\, e, -8 + 8.76848\, e, -8 - 4.60556\, e, -8 + 2.44015\, e, -8 - 1.30288\, e, -9 + 7.00479\, e\}[[21]]$$

```
F[2]
```

```
3.13633
```

```
N[1 / 10 000 000 000 000 000 000 000 000 000 000 000]
```

$$1. \times 10^{-31}$$

```
F[ -PolyLog[ 2, 1 - 2] + -PolyLog[2, 1 - 2] ]
```

```
2.39338
```