

In[17]:= % / 4

Out[17]= $\left\{ \frac{17}{4}, 0, 1, 0, -1 \right\}$

In[18]:= $\frac{17}{4} \text{Zeta}[4] + \text{Zeta}[2]$

Out[18]= $\frac{\pi^2}{6} + \frac{17 \pi^4}{360}$

In[19]:= % - x0

Out[19]= $0. \times 10^{-100}$

(* For example,
this is the list of constants up to level 6 where Log[2] is involved *)

```
x[1] = N[Zeta[5], 500] ;
x[2] = N[Zeta[3] Zeta[2], 500] ;
x[3] = N[Log[2] Zeta[4], 500] ;
x[4] = N[PolyLog[5, 1/2], 500] ;
x[5] = N[Log[2] PolyLog[4, 1/2], 500] ;
x[6] = N[Log[2]^5, 500] ;
x[7] = N[Log[2]^2 Zeta[3], 500] ;
x[8] = N[Log[2]^3 Zeta[2], 500] ;
x[9] = N[Zeta[4], 500] ;
x[10] = N[PolyLog[4, 1/2], 500] ;
x[11] = N[Log[2]^4, 500] ;
x[12] = N[Log[2]^2 Zeta[2], 500] ;
x[13] = N[Zeta[3] Log[2], 500] ;
x[14] = N[Zeta[3], 500] ;
x[15] = N[Log[2] Zeta[2], 500] ;
x[16] = N[Log[2]^3, 500] ;
x[17] = N[Zeta[2], 500] ;
x[18] = N[Log[2]^2, 500] ;
x[19] = N[Log[2], 500] ;
x[20] = N[Zeta[6], 500] ;
x[21] = N[Zeta[5] Log[2], 500] ;
x[22] = N[Zeta[4] Log[2]^2, 500] ;
x[23] = N[Zeta[3] Log[2]^3, 500] ;
x[24] = N[Zeta[3]^2, 500] ;
x[25] = N[Zeta[3] Zeta[2] Log[2], 500] ;
x[26] = N[Log[2]^6, 500] ;
x[27] = N[Zeta[2] Log[2]^4, 500] ;
x[28] = N[PolyLog[6, 1/2], 500] ;
x[29] = N[PolyLog[5, 1/2] Log[2], 500] ;
x[30] = N[PolyLog[4, 1/2] Log[2]^2, 500] ;
x[31] = N[PolyLog[4, 1/2] Zeta[2], 500] ;
x[32] = N[1, 500] ;
x[33] = N[appHPLs6, 500] ;
```

appHPLs6 =

```
0.98744142640329971377165000804182021413602714891426845727515905154561369911878895355 \
863956404477558915203056255385484634405674146808430963398029349014388073675782238914 \
431072868245446242746979584265585272725425183010859167628333328685038039329144638374 \
255888866551887721158448693857022393231698312530376047305702516583202905810931661490 \
473936355942820783847449825120107884979332566716367272547925735281416166238736093320 \
673713594250387141809300098954218750377349286950447367387499265350018206576197727 ;
```