

$$\begin{aligned}
C_5(n) &= \frac{31!}{2} \cdot 60^{31} \left[(80!)^2 (40!) \cdot 60 \cdot 24^{80} \cdot 6^{80} \cdot 2^{40} \right]^{n \bmod 2} \left(\frac{160!}{6} \cdot 12^{160} \right)^{\lfloor \frac{n-2}{2} \rfloor} \\
&\left(\frac{320!}{24^{80}} \cdot \frac{6^{320}}{2} \right)^{\lfloor \frac{n-2}{2} \rfloor + (n \bmod 2) \binom{n-3}{2}} \left(\frac{640!}{24^{160}} \cdot 3^{639} \right)^{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor} \left(\frac{320!}{(8!)^{40}} \cdot 2^{319} \right)^{\lfloor \frac{n-2}{2} \rfloor} \\
&\left(\frac{480!}{(12!)^{40}} \cdot 2^{479} \right)^{(n \bmod 2) \binom{n-3}{2}} \left(\frac{960!}{(24!)^{40}} \cdot 2^{959} \right)^{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor + \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor} \cdot 2^{(n \bmod 2) - 1} \\
&\left(\frac{240!}{(6!)^{40}} \cdot 2^{239} \right)^{(n \bmod 2) \binom{n-3}{2}} \left(\frac{1920!}{(24!)^{80}} \right)^{\lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor} \left(\frac{160!}{(16!)^{10}} \right)^{\lfloor \frac{n-2}{2} \rfloor} \\
&\left(\frac{320!}{(32!)^{10}} \right)^{(n \bmod 2) \binom{n-3}{2}} \left(\frac{640!}{(64!)^{10}} \right)^{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor} \left(\frac{240!}{(24!)^{10}} \right)^{(n \bmod 2) \binom{n-3}{2}} \\
&\left(\frac{960!}{(96!)^{10}} \right)^{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor} \cdot 2^{(n \bmod 2) - 1 + (n \bmod 2) \lfloor \frac{(n-5)(n-3)}{8} \rfloor} \left(\frac{80!}{(8!)^{10}} \right)^{(n \bmod 2) \binom{n-3}{2}} \\
&\left(\frac{1920!}{(192!)^{10}} \right)^{\lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor} \cdot 2^{(n \bmod 2) + 2} + \lfloor \frac{n-8}{2} \rfloor \lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor} \left(\frac{480!}{(48!)^{10}} \right)^{(n \bmod 2) \lfloor \frac{(n-5)(n-3)}{8} \rfloor}
\end{aligned}$$