

$$C_6(n) = \frac{63!}{2} \cdot 360^{63} (360 \cdot 192! \cdot 120^{192} \cdot 240! \cdot 24^{240} \cdot 160! \cdot 60! \cdot 6^{160} \cdot 2^{59})^{n \bmod 2} \left(\frac{384!}{2} \cdot 60^{384} \right)^{\lfloor \frac{n-2}{2} \rfloor}.$$

$$\left(\frac{960!}{2} \cdot 24^{720} \right)^{\lfloor \frac{n-2}{2} \rfloor + (n \bmod 2) \binom{n-3}{2}} \left(\frac{1920!}{24^{480}} \cdot \frac{12^{1920}}{3} \right)^{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor} \left(\frac{1280!}{(8!)^{160}} \cdot \frac{6^{1280}}{2} \right)^{\lfloor \frac{n-2}{2} \rfloor} \left(\frac{1920!}{(12!)^{160}} \cdot \frac{6^{1920}}{2} \right)^{(n \bmod 2) \binom{n-3}{2}}$$

$$\left(\frac{3840!}{(24!)^{160}} \cdot \frac{6^{3840}}{2} \right)^{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor + \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor \cdot 2^{(n \bmod 2) - 1}} \left(\frac{960!}{(6!)^{160}} \cdot \frac{6^{960}}{2} \right)^{(n \bmod 2) \binom{n-3}{2}} \left(\frac{7680!}{(24!)^{320}} \cdot 3^{7679} \right)^{\frac{\lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}{6}}$$

$$\left(\frac{960!}{(16!)^{60}} \cdot 2^{959} \right)^{\lfloor \frac{n-2}{2} \rfloor} \left(\frac{1920!}{(32!)^{60}} \cdot 2^{1919} \right)^{(n \bmod 2) \binom{n-3}{2}} \left(\frac{3840!}{(64!)^{60}} \cdot 2^{3839} \right)^{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor} \left(\frac{1440!}{(24!)^{60}} \cdot 2^{1439} \right)^{(n \bmod 2) \binom{n-3}{2}}$$

$$\left(\frac{5760!}{(96!)^{60}} \cdot 2^{5759} \right)^{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor \cdot 2^{(n \bmod 2) - 1} + (n \bmod 2) \lfloor \frac{(n-5)(n-3)}{8} \rfloor} \left(\frac{480!}{(8!)^{60}} \cdot 2^{479} \right)^{(n \bmod 2) \binom{n-3}{2}}$$

$$\left(\frac{11520!}{(192!)^{60}} \cdot 2^{11519} \right)^{\frac{\lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}{6} (2^{n \bmod 2} + 2)} \left(\frac{2880!}{(48!)^{60}} \cdot 2^{2879} \right)^{(n \bmod 2) \lfloor \frac{(n-5)(n-3)}{8} \rfloor} \left(\frac{23040!}{(192!)^{120}} \right)^{\frac{\lfloor \frac{n-8}{2} \rfloor \lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}{24}}$$

$$\left(\frac{384!}{(32!)^{12}} \right)^{\lfloor \frac{n-2}{2} \rfloor} \left(\frac{960!}{(80!)^{12}} \right)^{(n \bmod 2) \binom{n-3 + \frac{(n-5)(n-3)}{8}}{2}} \left(\frac{1920!}{(160!)^{12}} \right)^{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}$$

$$\left(\frac{3840!}{(320!)^{12}} \right)^{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor \cdot 2^{(n \bmod 2) - 1} + \frac{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}{2} + (n \bmod 2) \lfloor \frac{(n-5)(n-3)}{8} \rfloor} \left(\frac{480!}{(40!)^{12}} \right)^{(n \bmod 2) \binom{n-3}{2}}$$

$$\left(\frac{5760!}{(480!)^{12}} \right)^{(n \bmod 2) \left[\frac{(n-5)(n-3)}{8} + \frac{(n-7)(n-5)(n-3)}{48} \right]} \left(\frac{11520!}{(960!)^{12}} \right)^{\frac{\lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}{6} (2^{(n \bmod 2) + 1} + 1) + (n \bmod 2) \lfloor \frac{(n-7)(n-5)(n-3)}{48} \rfloor}$$

$$\left(\frac{2880!}{(240!)^{12}} \right)^{(n \bmod 2) \lfloor \frac{(n-5)(n-3)}{4} \rfloor} \left(\frac{23040!}{(1920!)^{12}} \right)^{\frac{\lfloor \frac{n-8}{2} \rfloor \lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}{24} (2^{n \bmod 2} + 3) + \frac{\lfloor \frac{n-10}{2} \rfloor \lfloor \frac{n-8}{2} \rfloor \lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}{60}}$$

$$\left(\frac{120!}{(10!)^{12}} \right)^{(n \bmod 2) \binom{n-3}{2}} \left(\frac{15360!}{(1280!)^{12}} \right)^{\frac{\lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}{6}} \left(\frac{7680!}{(640!)^{12}} \right)^{\frac{\lfloor \frac{n-6}{2} \rfloor \lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}{3}}$$