

$$\psi(a, b) = 2^a \binom{b}{a}$$

$$Z(x_1, x_2, x_3, x_4, x_5) = \frac{\left(x_1 \cdot \psi(d-a_1, d) \prod_{j=1}^{i-1} \psi(a_j - a_{j+1}, a_j) \right)! \left[\frac{(d-a_1)!}{x_3} \right]^{x_1 \cdot \psi(d-a_1, d) \prod_{m=1}^{i-1} \psi(a_m - a_{m+1}, a_m)}}{\left[\left(x_2 \cdot \prod_{k=1}^{i-1} \psi(a_k - a_{k+1}, a_k) \right)! \right]^{x_3 \cdot \psi(d-a_1, d)} \cdot 2^{x_4} \cdot 3^{x_5}}$$

$$y_1 = \left[\prod_{a_1=1}^{a_{i-1}-1} \left(z(1,1,1, \left\lfloor \frac{d-a_1-1}{d-1} \right\rfloor, 0) \right)^{\binom{n-3}{i-1}} \right]$$

$$y_2 = \left[\prod_{a_1=0}^0 \left(z(1,1,1, \left\lfloor \frac{d-a_1-1}{d-1} \right\rfloor, 0) \right)^{\binom{\lfloor \frac{n-2}{2} \rfloor}{i-1}} \right]$$

$$y_3 = \left[\prod_{a_1=1}^1 \left(z(2,2,1, \left\lfloor \frac{d-a_1-1}{d-1} \right\rfloor, 0) \right)^{\binom{\lfloor \frac{n-2}{2} \rfloor}{i-1}} \right]$$

$$y_4 = \left\{ \prod_{a_1=2}^2 \left(z(4,4,1, \left\lfloor \frac{d-a_1-1}{d-1} \right\rfloor, 0) \right)^{\binom{\lfloor \frac{n-2}{2} \rfloor}{i}} \cdot 2^{n \bmod 2} \left\{ \left(z(8,8,1, \left\lfloor \frac{d-a_1-1}{d-1} \right\rfloor, 0) \right)^{\lfloor \frac{a_1-i-1}{a_1-1} \rfloor} \left[\left(z(8,4,2,0, \left\lfloor \frac{4}{d-a_1} \right\rfloor \left\lfloor \frac{d-a_1-2}{d-1} \right\rfloor \right)^{\lfloor \frac{d-i-2}{d-2} \rfloor} (z(4,4,1,0,0))^2 \right]^{\lfloor \frac{i}{d-2} \rfloor} \right]^{\lfloor \frac{i}{a_1-1} \rfloor} \right\}^{\binom{\lfloor \frac{n-2}{2} \rfloor}{i+1}} \right\}$$

$$C_d(n) = \frac{(2^d - 1)! \left(\frac{d!}{2} \right)^{2^d - 1}}{2^{\lfloor \frac{d-3}{d} \rfloor} \cdot 3^{\lfloor \frac{4}{d} \rfloor}} \left[2^{4-d - \lfloor \frac{3}{d} \rfloor} \prod_{i=2}^{d-1} (\psi(i, d))! (i!)^{\psi(i, d)} \right]^{n \bmod 2} \left\{ \frac{(2^d \cdot d)! \left[\frac{(d-1)!}{2} \right]^{2^d \cdot d}}{\left(2 \cdot 3^{\lfloor \frac{5}{d} \rfloor} \right)^{\lfloor \frac{d-3}{d} \rfloor}} \right\}^{\lfloor \frac{n-2}{2} \rfloor} \left\{ \frac{[2^{d-1} \cdot d(d-1)]! [(d-2)!]^{2^{d-1} \cdot d(d-1)}}{2^{\lfloor \frac{d-3}{d} \rfloor} \cdot 24^{2^{d-3} \cdot d(d-1)}} \right\}^{\lfloor \frac{n-2}{2} \rfloor} \cdot 2^{n \bmod 2}$$

$$\left\{ \frac{\left[2^{d - \lfloor \frac{3}{d} \rfloor} \cdot d(d-1) \right]! \left[\frac{(d-2)!}{2} \right]^{2^{d - \lfloor \frac{3}{d} \rfloor} \cdot d(d-1)}}{3^{\lfloor \frac{6}{d} \rfloor} \left[\frac{d-4}{d} \right] \cdot 24^{2^{d-2 - \lfloor \frac{3}{d} \rfloor} \cdot d(d-1)}} \right\}^{\frac{\lfloor \frac{n-4}{2} \rfloor \lfloor \frac{n-2}{2} \rfloor}{2^{\lfloor \frac{d-3}{d} \rfloor}}} \prod_{i=2}^{d-2} \prod_{a_1=i+1}^{d-1} \prod_{a_2=i}^{a_1-1} \prod_{a_3=i-1}^{a_2-1} \dots \prod_{a_{i-1}=3}^{a_{i-2}-1} (y_1 \cdot y_2 \cdot y_3 \cdot y_4)$$