

[2] Permutare:

$$P = \left( C_5^0 C_3^2 C_5^3 C_7^1 + C_5^1 C_3^1 C_5^2 C_7^2 + C_5^2 C_3^0 C_5^1 C_7^3 \right) \left( C_8^2 C_{12}^4 \right)^{-1} = (1)$$

$$C_5^0 C_3^2 C_5^3 C_7^1 = (1)(3) \left( \frac{5!}{2!2!} \right) (7) = (1)(3) \left( \frac{5 \cdot 4}{2} \right) (7) = (1)(3)(10)(7) =$$

$$= (3 \cdot 7) 10 = 21 \cdot 10 = 210$$

$$C_5^1 C_3^1 C_5^2 C_7^2 = (5)(2) \left( \frac{5!}{2!3!} \right) \left( \frac{7!}{2!5!} \right) = (5)(2) \left( \frac{5 \cdot 4}{2} \right) \left( \frac{7 \cdot 6}{2} \right) = (5)(2)(10)(21) =$$

$$= (2 \cdot 21) \cdot 5 \cdot 10 = (63 \cdot 5) \cdot 10 = 315 \cdot 10 = 3150$$

$$C_5^2 C_3^0 C_5^1 C_7^3 = \left( \frac{5!}{2!3!} \right) (1)(5) \left( \frac{7!}{3!4!} \right) = \left( \frac{5 \cdot 4}{2} \right) (1)(5) \left( \frac{7 \cdot 6 \cdot 5}{6} \right) = (10)(1)(5)(35) =$$

$$= (5 \cdot 35) \cdot 10 = 175 \cdot 10 = 1750$$

$$C_8^2 C_{12}^4 = \left( \frac{8!}{2!6!} \right) \left( \frac{12!}{4!8!} \right) = \left( \frac{8 \cdot 7}{2} \right) \left( \frac{12 \cdot 11 \cdot 10 \cdot 9}{4 \cdot 3 \cdot 2} \right) = (4 \cdot 7) (5 \cdot 5 \cdot 11) =$$

$$= (2 \cdot 7 \cdot 5 \cdot 11) (2 \cdot 5) = (2 \cdot 63 \cdot 11) \cdot 10 = (11 \cdot 126) \cdot 10 = 1386 \cdot 10 = 13860$$

$$210 + 3150 + 1750 = 210 + 4900 = 5110$$

$$(1) = \frac{5110}{13860} = \frac{511}{1386}$$

Ornament:

$$P = \left( C_5^0 C_3^2 C_5^3 C_7^1 + C_5^1 C_3^1 C_5^2 C_7^2 + C_5^2 C_3^0 C_5^1 C_7^3 \right) \left( C_8^2 C_{12}^4 \right)^{-1} =$$

$$= \frac{511}{1386}$$