$\boxed{\text{№3}}$ Решение:

$$P = 1 - \left[\left(C_7^0\, C_{10-7}^{2-0}\right)\left(C_9^0\, C_{11-9}^{2-0}\right)\right]\left[C_{10}^2\, C_{11}^2\right]^{-1} =$$

$$= 1 - \left[\left(C_7^0 C_3^2\right)\left(C_9^0 C_2^2\right)\right]\left[C_{10}^2 C_{11}^2\right]^{-1} =$$

$$= 1 - \frac{C_3^2 C_2^2}{C_{10}^2 C_{11}^2} = (1)$$

$$\frac{C_3^2\, C_2^2}{C_{10}^2\, C_{11}^2} = \frac{C_3^2}{C_{10}^2} \cdot \frac{C_2^2}{C_{11}^2} =$$

$$= \frac{A_3^2}{2!}\left(\frac{A_{10}^2}{2!}\right)^{-1} \frac{A_2^2}{2!}\left(\frac{A_{11}^2}{2!}\right)^{-1} = \frac{A_3^2}{A_{10}^2}\ \frac{A_2^2}{A_{11}^2} =$$

$$= \frac{3\cdot 2}{10\cdot 9} \cdot \frac{2\cdot 1}{11\cdot 10} = \left(\frac{3}{10}\cdot\frac{2}{9}\right)\left(\frac{2}{11}\cdot\frac{1}{10}\right) =$$

$$= \frac{2\cdot 2\cdot \cancel{3}}{\underset{3\ \ \ 5\ \ \ 5}{\cancel{9}\cdot 10 \cdot 10 \cdot 11}} = \frac{1}{3\cdot 5\cdot 5} = \frac{1}{3\cdot 25} = \frac{1}{75}$$

$$(1) = 1 - \frac{1}{75} = \frac{75-1}{75} = \frac{74}{75}$$

Ответ:

$$\boxed{P = 1 - \frac{C_3^2 C_2^2}{C_{10}^2 C_{11}^2} = \frac{74}{75}}$$