Токмаков Александр, группа БПМИ165

Домашнее задание 8

$$N_9$$
 ($\xi - \eta$)

а)
$$\rho_{\xi}(x) = \rho_{\eta}(x) = Ind_{[0,1]}(x), \quad \rho_{\xi\eta}(x,y) = Ind_{[0,1]}(x) \cdot Ind_{[0,1]}(y) = Ind_{[0,1]^2}(x,y), \quad \varkappa = \xi - \eta$$
 При $t \in [-1,0]$:

$$F_{\varkappa}(t) = P(\varkappa \le t) = P(\xi - \eta \le t) = \iint_{x - y \le t} \rho_{\xi\eta}(x, y) dx dy = \int_{-\infty}^{+\infty} \left(\int_{-\infty}^{z + y} \rho_{\xi\eta}(x, y) dx \right) dy = \int_{-\infty}^{+\infty} Ind_{[0,1]}(y) \left(\int_{-\infty}^{z + y} Ind_{[0,1]}(x) dx \right) dy = \int_{-\infty}^{+\infty} Ind_{[0,1]}(y) \left(\int_{-\infty}^{z + y} Ind dx \right) dy$$
$$F_{\varkappa}(z) = \left\{ 0, \quad z \le 1 \right\}$$