

Př. 8.

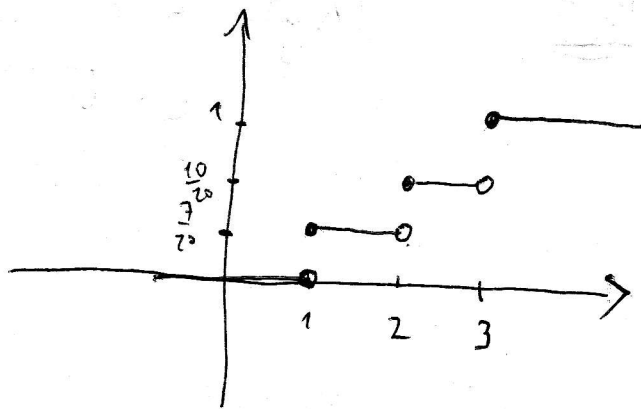
a)

$P_{X Y}$	2	5	6	$P_X(x)$
1	$\frac{1}{5}$	$\frac{1}{10}$	$\frac{1}{20}$	$\frac{7}{20}$
2	$\frac{1}{10}$	$\frac{1}{20}$	0	$\frac{3}{20}$
3	$\frac{3}{10}$	$\frac{1}{20}$	$\frac{3}{20}$	$\frac{10}{20}$
$P_Y(y)$	$\frac{12}{20}$	$\frac{4}{20}$	$\frac{4}{20}$	

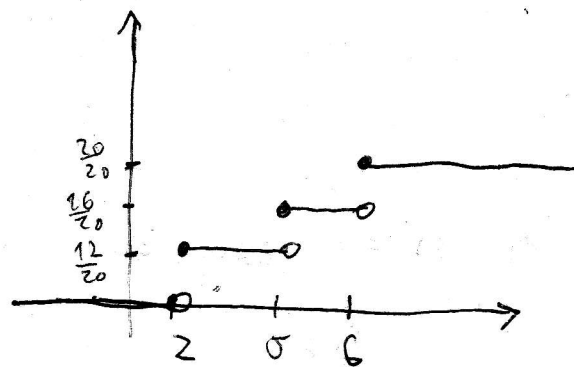
$$P_X(x) = \begin{cases} \frac{7}{20} & x=1 \\ \frac{3}{20} & x=2 \\ \frac{10}{20} & x=3 \end{cases}$$

$$P_{X \in \mathbb{R}, Y=2} \quad P_Y(y) = \begin{cases} \frac{12}{20} & y=2 \\ \frac{4}{20} & y=5 \\ \frac{4}{20} & y=6 \end{cases}$$

$$F_X(x) = P(X \leq x) = \begin{cases} 0 & x < 0 \\ 0 & 0 \leq x < 1 \\ \frac{7}{20} & 1 \leq x < 2 \\ \frac{10}{20} = \left(\frac{3}{20} + \frac{7}{20}\right) & 2 \leq x < 3 \\ 1 = \left(\frac{7}{20} + \frac{3}{20} + \frac{10}{20}\right) & 3 \leq x \end{cases}$$



$$F_Y(y) = P(Y \leq y) = \begin{cases} 0 & y < 2 \\ \frac{12}{20} & 2 \leq y < 5 \\ \frac{16}{20} & 5 \leq y < 6 \\ \frac{20}{20} & 6 \leq y \end{cases}$$



b) združení distr. f.

$F_{X,Y}(x,y)$	$[2,5)$	$[5,6)$	$[6,\infty)$
$[1,2)$	$\frac{1}{5}$	$\left(\frac{1}{5} + \frac{1}{10}\right) \frac{3}{10}$	$\frac{7}{20}$
$[2,3)$	$\frac{3}{10} = \left(\frac{1}{5} + \frac{1}{10}\right) \frac{3}{10} + \frac{1}{10} + \frac{1}{20} = \frac{9}{20}$	$\frac{9}{20}$	$\frac{10}{20}$
$[3,\infty)$	$\frac{3}{5}$	$\frac{4}{5}$	1

$$F_{X,Y}(x,y) = P(X \leq x, Y \leq y)$$

$$\lim_{\substack{x_1 \rightarrow \infty \\ x_2 \rightarrow \infty \\ x_n \rightarrow \infty}} F(x_1, \dots, x_n) = 1 \quad \lim_{y \rightarrow \infty} F(x, \dots, y) = 0$$

alespon jeden $\rightarrow \infty$

