$$= \int_1^2 \frac{8}{3}x - \frac{4}{3}x^2 - \frac{4}{3} + \frac{1}{3}x^2\,dx = -\left[\frac{x^3}{3}\right]_1^2 + \frac{8}{3}\left[\frac{x^2}{2}\right]_1^2 - \frac{4}{3}\left[x\right]_1^3 =$$

$$= -\frac{7}{3} + \frac{16}{3} - \frac{4}{3} - \frac{4}{3} = \frac{1}{3}.$$

Př. 10

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

Marginální distr. f.?
sdružená hp, marginální f.?

$$f_{XY} = F''(x,y) = \begin{cases} xy & 0 \le x \le 1,\ 0 \le y \le 2 \\ 0 & \text{jinak} \end{cases}$$

marginální h.

$$f_X(x) = \int_{-\infty}^{\infty} f_{(X,Y)}(x,y)\,dy = \left[\frac{1}{2}xy^2\right]_0^2 = \underline{\underline{2x}}$$

$$f_Y(y) = \int_{-\infty}^{\infty} f_{(X,Y)}(x,y)\,dx = \left[\frac{1}{2}x^2y\right]_0^1 = \underline{\underline{\frac{1}{2}y}}$$

1. způsob

$$F_X(x) = \int_{-\infty}^{x} 2u\,du = \left[\frac{2u^2}{2}\right]_0^x = \underline{\underline{x^2}}$$

$$F_Y(y) = \int_{-\infty}^{y} \frac{1}{2}v\,dv = \int_0^y \frac{1}{2}v\,dv = \frac{1}{2}\frac{v^2}{2} = \underline{\underline{\frac{1}{4}y^2}};$$