(1

$$f(x,y) = \begin{cases} 2 & 0 \le x \le 1,\ 0 \le y \le 1-x \\ 0 & \text{inače} \end{cases}$$

$$F(u,v) = \int_{-\infty}^{\infty}\int_{-\infty}^{\infty} f(x,y)\, e^{-j2\pi(ux+vy)}\, dx\,dy = \int_0^1\int_0^{1-x} 2\, e^{-j2\pi(ux+vy)}\, dy\,dx$$

$$= \int_0^1 2e^{-j2\pi ux} \int_0^{1-x} e^{-j2\pi vy}\, dy\, dx = \int_0^1 2e^{-j2\pi ux} \cdot \left[\frac{e^{-j2\pi vy}}{-j2\pi v}\right]_0^{1-x} dx =$$

$$= \int_0^1 2e^{-j2\pi ux} \left[-\frac{1}{j2\pi v}\left(e^{-j2\pi v(1-x)} - 1\right)\right] dx$$

$$= -\frac{2}{j2\pi v}\int_0^1 e^{-j2\pi ux}\left(e^{-j2\pi v(1-x)} - 1\right)\Big] dx =$$

$$= -\frac{2}{j2\pi v}\int_0^1 e^{-j2\pi ux - j2\pi v + j2\pi vx} - e^{-j2\pi ux}\, dx$$

$$= -\frac{2}{j2\pi v}\cdot\int_0^1 e^{-j2\pi v}\cdot e^{-j2\pi x(u-v)} - e^{-j2\pi vx}\, dx =$$

$$= -\frac{2}{j2\pi v}\left[e^{-j2\pi v}\cdot\frac{e^{-j2\pi x(u-v)}}{-j2\pi(u-v)}\Big|_0^1 - \frac{e^{-j2\pi vx}}{-j2\pi v}\Big|_0^1\right] =$$

$$= -\frac{2}{j2\pi v}\left[e^{-j2\pi v}\cdot\left[\frac{e^{-j2\pi(u-v)}}{-j2\pi(u-v)} - 1\right] - \frac{e^{-j2\pi v}}{0 - j2\pi v} + 1\right]$$

$$= -\frac{2}{j2\pi v}\left[\frac{e^{-j2\pi u}}{-j2\pi(u-v)} - e^{-j2\pi v} - \frac{e^{-j2\pi v}}{-j2\pi v} + 1\right]$$