

6.12.

$$\int_D \frac{x}{1+y^2} dx dy = \int_{y=0}^1 \int_{x=0}^{\sqrt{y}} \frac{x}{1+y^2} dx dy = \int_{y=0}^1 \frac{1}{2} \frac{y}{1+y^2} dy$$

SVAR:

$$\int_D \frac{x}{1+y^2} dx dy = \frac{1}{4} \ln 2$$