

Aula 16 - 31/4/

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• Volume do conjunto é dado por:

$$V = \iint_B f(x,y) dx dy$$

$$\cdot V = \int_0^1 \left[ \int_0^1 (e^{xy}) - (1) dx \right] dy \Rightarrow V = \int_0^1 \left[ \int_0^1 (e^{xy} - 1) dx \right] dy$$

$$V = \int_0^1 [e^{xy} - x] \Big|_{x=0}^{x=1} dy$$

$$\cdot V = \int_0^1 [e^{e^y} - 1 - e^y + 0] dy = \int_0^1 [(e-1)e^y - 1] dy$$

$$\cdot V = [(e-1)e^y - y] \Big|_0^1$$

$$\cdot V = [(e-1)e - 1] - [(e-1) + 0] = e^2 - e - 1 - e + 1$$

$$V = e^2 - 2e$$

• O volume será  $e^2 - 2e$