Calcolare i seguenti integrali doppi:

Posto $A = \left\{(x, y) \in R^2 : -1 \leq x \leq 1,\ 0 \leq y \leq x^2\right\}$, calcolare

$$\iint\limits_A \frac{y}{x} dxdy$$

Risposta: 0

Posto $A = \left\{(x, y) \in R^2 : 0 \leq x \leq \pi,\ e^x \leq y \leq e^\pi\right\}$, calcolare

$$\iint\limits_A \frac{\cos x}{y(\pi - x)} dxdy$$

Risposta: 0

Posto $A = \left\{(x, y) \in R^2 : 0 \leq x \leq \pi,\ \log(1 + x) \leq y \leq x\right\}$, calcolare

$$\iint\limits_A \frac{\mathrm{sen} x}{2\sqrt{y}(\sqrt{x} - \sqrt{\log(1 + x)})} dxdy$$

Risposta: 2

Posto $A = \left\{(x, y) \in R^2 : 1 \leq x \leq 9,\ 0 \leq y \leq e^{x-9}\right\}$, calcolare

$$\iint\limits_A \frac{\mathrm{sen} y}{\sqrt{x}\left(1 - \cos\left(e^{x-9}\right)\right)} dxdy$$

Risposta: 4

Posto $A = \left\{(x, y) \in R^2 : 3 \leq x \leq 5,\ x^3 + 1 \leq y \leq x^3 + 2\right\}$, calcolare

$$\iint\limits_A \frac{x}{2\sqrt{y}(\sqrt{x^3 + 2} - \sqrt{x^3 + 1})} dxdy$$

Risposta: 8

Posto $A = \left\{(x, y) \in R^2 : e \leq x \leq e^2,\ -\log x \leq y \leq -1\right\}$, calcolare

$$\iint\limits_A \frac{e^y \log x}{e^{-1} - x^{-1}} dxdy$$

Risposta: e^2

Posto $A = \left\{(x,y) \in R^2 : e \le x \le e^2,\ -\pi/2 \le y \le \frac{\log x}{2}\right\}$, calcolare

$$\iint_A \frac{\text{sen} y}{x \cos\left(\frac{\log x}{2}\right)} dxdy$$

Risposta: -1

Posto $A = \{(x,y) \in R^2 : e \le x \le e^3,\ x-1 \le y \le x+1\}$, calcolare

$$\iint_A \frac{3y^2 \log x}{(x+1)^3 - (x-1)^3} dxdy$$

Risposta: $2e^3$

Posto $A = \{(x,y) \in R^2 : 1 \le x \le 16,\ 1 + \text{sen}^2 x \le y \le 2\}$, calcolare

$$\iint_A \frac{1}{2\sqrt{xy}(\sqrt{2} - \sqrt{1 + \text{sen}^2 x})} dxdy$$

Risposta: 6

Posto $A = \{(x,y) \in R^2 : 0 \le x \le 1,\ x+1 \le y \le e^x\}$, calcolare

$$\iint_A \frac{x^4 e^y}{e^{e^x} - e^{x+1}} dxdy$$

Risposta: $1/5$

Posto $A = \{(x,y) \in R^2 : \pi \le x \le 2\pi,\ e^x \le y \le 2e^x\}$, calcolare

$$\iint_A \frac{\cos x}{y \log 2} dxdy$$

Risposta: 0