

ESERCIZI SUGLI INTEGRALI DOPPI

- 1) $\iint_A \frac{12x^5}{1+y^4} dx dy$ in $A = \{(x,y) \in \mathbf{R}^2; x \geq 0; x^2 \leq y \leq 1\}$.
- 2) $\iint_A \frac{12x^5}{1+y^3} dx dy$ in $A = \{(x,y) \in \mathbf{R}^2; x \geq 0; x^3 \leq y \leq 1\}$.
- 3) $\iint_A \frac{xy+1}{x^2+y^2} dx dy$ in $A = \{(x,y); 1 \leq x^2+y^2 \leq 9, 0 \leq y \leq x\}$.
- 4) $\iint_A \frac{xy+1}{x^2+y^2} dx dy$ in $A = \{(x,y); 1 \leq x^2+y^2 \leq 4, x \geq 0, y \geq 0\}$.
- 5) $\iint_A \frac{x^2 y}{x^2+y^2} dx dy$, $A = \{(x,y) \in \mathbf{R}^2; 4 \leq x^2+y^2 \leq 9, y \leq -|x|\}$.
- 6) $\iint_A \frac{xy^2}{x^2+y^2} dx dy$, $A = \{(x,y) \in \mathbf{R}^2; 4 \leq x^2+y^2 \leq 9, x \leq -|y|\}$.
- 7) $\iint_A \frac{x^2 y}{x^2+y^2} dx dy$, $A = \{(x,y) \in \mathbf{R}^2; 4 \leq x^2+y^2 \leq 9, |x| \leq y\}$.
- 8) $\iint_A \frac{xy^2}{x^2+y^2} dx dy$, $A = \{(x,y) \in \mathbf{R}^2; 4 \leq x^2+y^2 \leq 9, |y| \leq x\}$.
- 9) $\iint_A (x-3)e^y dx dy$ in $A = \{(x,y) \in \mathbf{R}^2; x \leq 6, x^2-6x \leq y \leq \ln(x+1)\}$.
- 10) $\iint_A (x-2)e^y dx dy$ in $A = \{(x,y) \in \mathbf{R}^2; x \leq 4, x^2-4x \leq y \leq \ln(x+1)\}$.
- 11) $\iint_A (x-1)e^y dx dy$ in $A = \{(x,y) \in \mathbf{R}^2; x \leq 2, x^2-2x \leq y \leq \ln(x+1)\}$.
- 12) $\iint_A \frac{y}{x} dx dy$ in $A = \{(x,y); x^2+y^2 \leq 16, x^2+y^2-4y \geq 0, 0 \leq x \leq y\}$.
- 13) $\iint_A \frac{y}{x} dx dy$ in $A = \{(x,y); x^2+y^2 \leq 4, x^2+y^2-2y \geq 0, 0 \leq x \leq y\}$.
- 14) $\iint_A \frac{y}{x} dx dy$ in $A = \{(x,y); x^2+y^2 \leq 1, x^2+y^2-y \geq 0, 0 \leq x \leq y\}$.
- 15) $\iint_A \frac{1}{y^2} dx dy$ in $A = \{(x,y); 2 \leq y \leq 3, 1 \leq x^3 y \leq 2\}$.
- 16) $\iint_A \frac{1}{y} dx dy$ in $A = \{(x,y); x^2-5x+4 \leq 0, 1 \leq x^2 y \leq 2\}$.
- 17) $\iint_A \frac{1}{x} dx dy$ in $A = \{(x,y); x \geq 1, x-y \geq 0, y-2x+2 \geq 0\}$.
- 18) $\iint_A x dx dy$ in $A = \{(x,y); y \leq 4x-x^2 \leq 4y\}$.
- 19) $\iint_A x dx dy$ in $A = \{(x,y); y \leq 8x-2x^2 \leq 4y\}$.
- 20) $\iint_A \frac{1}{y^2} dx dy$ in $A = \{(x,y); 1 \leq x^2+y^2 \leq 4, 0 \leq x \leq \frac{1}{\sqrt{3}}y\}$.
- 21) $\iint_A \frac{1}{y^2} dx dy$ in $A = \{(x,y); 1 \leq x^2+y^2 \leq 4, 0 \leq x \leq y\}$.

- 22) $\iint_A \frac{1}{x^2} dx dy$ in $A = \{(x,y); 1 \leq x^2 + y^2 \leq 4, \frac{\sqrt{3}}{3}x \leq y \leq x\}$.
- 23) $\iint_A \frac{1}{x^2} dx dy$ in $A = \{(x,y); 1 \leq x^2 + y^2 \leq 4, x \leq y \leq \sqrt{3}x\}$.
- 24) $\iint_A \frac{1}{x} dx dy$, in $A = \{(x,y); x \geq 1, 2x-3 \leq y \leq x\}$.
- 25) $\iint_A xy^2 dx dy$, in $A = \{(x,y); x^2 + y^2 \leq 4, x + y \geq 0\}$.
- 26) $\iint_A xy dx dy$, in $A = \{(x,y); x^2 - 4x \leq y \leq 16 - x^2\}$.
- 27) $\iint_A xy dx dy$, in $A = \{(x,y); x^2 - 2x \leq y \leq 4 - x^2\}$.
- 28) $\iint_A y dx dy$ in $A = \{(x,y); x^2 + y^2 + 6y \leq 0\}$.
- 29) $\iint_A (x-2) dx dy$, in $A = \{(x,y); -x-4 \leq y \leq -x^2-3x+4\}$.
- 30) $\iint_A \frac{x}{x^2 + y^2 + 2} dx dy$, in $A = \{(x,y); x^2 + y^2 \leq 2, x-y \leq 0\}$.