

Ez az szócikk a Matematika A2a 2008 alszócikke.

1.

$$f(x, y) = xy \sin(x^2 y)$$

$$T = [0,1] \times [0, 1/2]$$

2.

$$f(x, y) = 2xy^2 e^{x^2 y}$$

$$T = [0,1] \times [0,1]$$

3.

$$f(x, y) = x^7 + \frac{\arctg(y)}{1 + y^2}$$

$$T = [0,1] \times [0,1]$$

4.

$$T = [-1,1] \times [0, 1/4]$$

$$f(x, y) = \sin(x^3) \frac{1}{\cos^2 y}$$

5.

$$T = [-1,1] \times [e, e^2]$$

$$f(x, y) = \sin(x^3) \frac{\sin^{2017}(\operatorname{sh}(y))}{\ln y}$$

6.

$$T = [a,b] \times [c,d]$$

$$f(x,y) = g(x)h(y)$$

téglalapon szeparálható integrandus integrálja szorzattá esik szét:

$$\int_{x=a}^b \int_{y=c}^d g(x)h(y) dx dy = \int_{x=a}^b g(x) \left(\int_{y=c}^d h(y) dy \right) dx = \left(\int_{x=a}^b g(x) dx \right) \cdot \left(\int_{y=c}^d h(y) dy \right)$$

7.

$$T = [1,e] \times [1,2]$$

$$f(x, y) = \frac{\ln^9 x}{xy}$$

8.

$$T = \{(x, y) \mid 0 \leq x \leq 1 \wedge 0 \leq y \leq x^2\}$$

$$f(x, y) = x^3 \cos(xy)$$

9.

$$\int_{y=0}^{\pi} \int_0^{\cos y} x \sin y \, dx dy$$

10.

$$\int_{\sqrt{\pi}}^{\sqrt{2\pi}} \int_0^{x^3} \sin \frac{y}{x} \, dy dx$$

11.

$$\int_0^1 \int_y^1 e^{x^2} \, dx dy$$

12.

$$\int_1^4 \int_{\sqrt{y}}^2 \sin \left(\frac{x^3}{3} - x \right) \, dx dy$$

13.

$$\int_0^2 \int_{1+y^2}^5 y \cdot e^{(x-1)^2} \, dx dy$$

14.

$$\iint_{T_{x,y}} xy^7 \, dx dy$$

$$T_{x,y} = \{(x, y) \mid x^2 + y^2 \leq 1, \quad x \geq 0, \quad y \geq 0\}$$

15.

$$\iiint_{T_{x,y,z}} \sqrt{x^2 + y^2} \cdot xy^2 z^2 \, dx dy dz$$

$$T_{x,y,z} = \{(x, y) \mid x^2 + y^2 \leq 4, \quad x \geq 0, \quad 0 \leq z \leq 3\}$$

6. gyakorlat 8. gyakorlat