

## Vairākkārtīgie integrāļi.

Aprēķināt dotos integrāļus!

1.

$$\iint_D xy^2 dx dy$$

D — apgabals, kas atrodas starp līknēm

$$y = x^2 - 1 \quad \text{un} \quad y = 2x + 2$$

2.

$$\iiint_D dx dy dz$$

$$D = \{(x, y, z) \mid 0 \leq x \leq 1; 0 \leq y \leq 2; 0 \leq z \leq 3\}$$

3.

$$\iint_D \frac{x^2}{y^2} dx dy$$

D — apgabals, ko ierobežo taisnes

$$x = 2, y = x, \quad \text{un hiperbola} \quad xy = 1$$

4.

$$\iiint_D (x + y + z) dx dy dz$$

$$D = [0; a] \times [0; b] \times [0; c], \quad \text{kur} \quad a > 0, b > 0, c > 0$$

5.

$$\iint_D (x^2 + y) dx dy$$

D — apgabals, ko ierobežo parabolas

$$y = x^2 \quad \text{un} \quad y^2 = x$$

6.

$$\iint_D xy dx dy$$

D — apgabals, kas atrodas starp līknēm

$$y = 2 - x^2 \quad \text{un} \quad y + x + 4 = 0$$

7.

$$\iiint_D z \, dx \, dy \, dz$$

$$D = \{(x, y, z) \mid 0 \leq x \leq 3; -1 \leq y \leq 0; -1 \leq z \leq 1\}$$

8.

$$\iint_D \cos(x + y) \, dx \, dy$$

D — apgabals, ko ierobežo taisnes

$$x = 0, \quad y = \pi \quad \text{un} \quad y = x$$

9.

$$\iiint_D (x - y + z) \, dx \, dy \, dz$$

$$D = [-2; 1] \times [-3; 1] \times [-7; -5]$$

10.

$$\iint_D \frac{y^2}{1 + x^2} \, dx \, dy$$

$$D = [-1; 1] \times [-1; 0]$$