

Rješenje druge školske zadaće iz Matematike 3E

Grupe E1, E3, E5

23.11.2006.

Grupa A

1. (2 boda)  $I = \int_0^1 dx \int_1^{2x+1} f(x, y) dy + \int_1^3 dx \int_{3x-2}^{2x+1} f(x, y) dy$

2. (3 boda)  $I = \int_{\frac{\pi}{3}}^{\frac{2\pi}{3}} d\varphi \int_{\frac{\sqrt{3}}{\sin \varphi}}^2 r^3 \sin^2 \varphi dr = \dots = \frac{2\pi}{3} - \frac{\sqrt{3}}{2}$

3. (3 boda)  $V = \int \int_D \sqrt{1 - \frac{x^2}{4} - \frac{y^2}{9}} dx dy = 6 \int_0^{2\pi} d\varphi \int_0^1 \sqrt{1 - r^2} r dr = \dots = 4\pi$

4. (2 boda)  $I = \int_0^{\frac{2}{5}} dx \int_0^{\frac{2}{5} - \frac{5x}{7}} dy \int_0^{\frac{1}{2} - \frac{5x}{4} - \frac{7y}{4}} f(x, y, z) dz$

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Grupa B

1. (2 boda)  $I = \int_0^{5/2} dx \int_3^{x+3} f(x, y) dy + \int_{5/2}^5 dx \int_{2x-2}^{x+3} f(x, y) dy$

2. (3 boda)  $I = \int_{-\frac{\pi}{4}}^{\frac{\pi}{4}} d\varphi \int_{\frac{\sqrt{2}}{\cos \varphi}}^2 r^3 \cos^2 \varphi dr = \dots = \pi$

3. (3 boda)  $V = \int \int_D (2 - x^2 - y^2) dx dy = \int_0^{2\pi} d\varphi \int_0^{\sqrt{2}} (2 - r^2) r dr = \dots = 2\pi$

4. (2 boda)  $I = \int_0^2 dx \int_0^4 dy \int_0^{8-x-y} f(x, y, z) dz$