Analytic Geometry and Calculus III (22005 Section 02)
Home Work 7, due Wednesday, October 26.
Instructor: Prof. Artem Zvavitch

Problem 1. *Evaluate the integral*

$$\int_0^1 \int_y^1 e^{-x^2} dxdy$$

Problem 2. *Evaluate the integral*

$$\int\int_D x^2 + y^2 dA,$$

where D is a disc centered at the origin and radius 3.

Problem 3. *Evaluate the integral*

$$\int\int_D x^2 - y^2 dA,$$

where D is the region bounded by the circles $x^2+y^2 = 9$ and $x^2+y^2 = 25$.

Problem 4. *find the volume of a solid bounded by the planes $x = 0$, $y = 0$, $z = 0$ and the paraboloid $z = 9 - x^2 - y^2$.*

Problem 5. *Find the volume of the solid that lies under the paraboloid $z = 4x^2 + 4y^2$ above the xy-plane, and inside the cylinder $x^2 + y^2 = 6y$.*