

Some problems from HW9

Questions

Question 1. A solid object lying in the region in space between the cylinders $x = y^2$ and $x = 4 - y^2$ and the planes $z = 0$ and $z = x$ has density $\rho(x, y, z) = xyz$. Set up, but do not evaluate, an integral which computes the mass of this object.

HW problems

Here are a couple of problems from the current assigned homework. Consider if you'd be willing to present a solution to one of them at the board!

Problem (§15.3 #13). Evaluate $\iint_R \arctan(y/x) \, dA$ where $R = \{(x, y) : 1 \leq x^2 + y^2 \leq 4, 0 \leq y \leq x\}$.

Problem (§15.4 #15). Find the center of mass of a lamina in the shape of an isosceles right triangle with equal sides of length a if the density at any point is proportional to the square of the distance from the vertex opposite the hypotenuse.