Problem statement Suppose that $f(x, y)$ is some function of two variables and we wish to evaluate $I = \int\int_R f(x, y)\, dA$, where R is the region in the xy-plane lying between the circles $x^2 + y^2 = 4$ and $(x - 1)^2 + y^2 = 1$. Set up (but do not try to evaluate) I as a sum of iterated integrals.