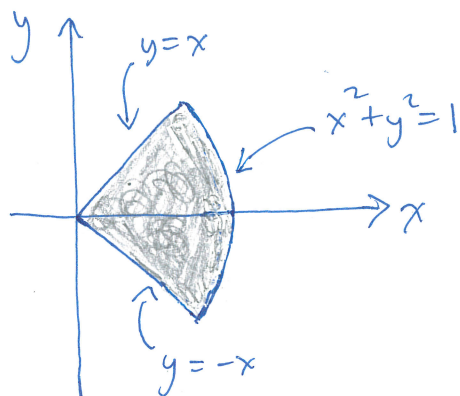
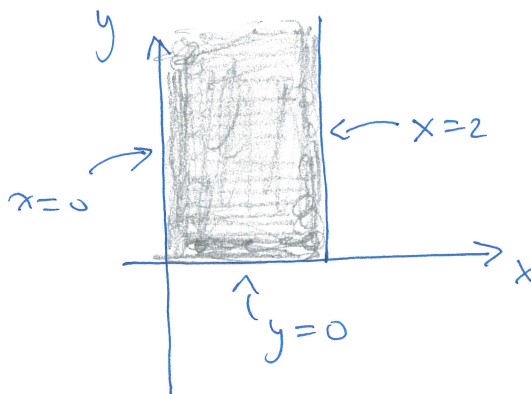


3. In each of the following, if the iterated integral in polar coordinates is equal to a double integral $\iint_D f(x, y) dA$ for all continuous functions f on D , then draw a picture of the region D by clearly shading it and labeling the curves bounding it with their equations in rectangular coordinates. Otherwise, put a large $\times$ (and nothing else) in the space below it.

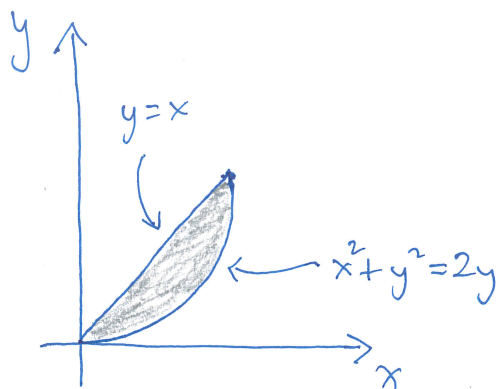
a. $\int_{-\pi/4}^{\pi/4} \int_0^1 f(r \cos \theta, r \sin \theta) r dr d\theta$



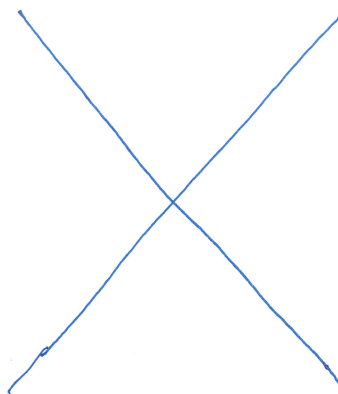
b. $\int_0^{\pi/2} \int_0^{2 \sec \theta} f(r \cos \theta, r \sin \theta) r dr d\theta$



c. $\int_0^{\sqrt{2}} \int_{\arcsin(r/2)}^{\pi/4} f(r \cos \theta, r \sin \theta) r d\theta dr$



d. $\int_0^{\cos \theta} \int_0^{\pi/4} f(r \cos \theta, r \sin \theta) r d\theta dr$



e. $\int_0^{\pi/2} \int_{\cos \theta}^{2 \cos \theta} f(r \cos \theta, r \sin \theta) r dr d\theta$

