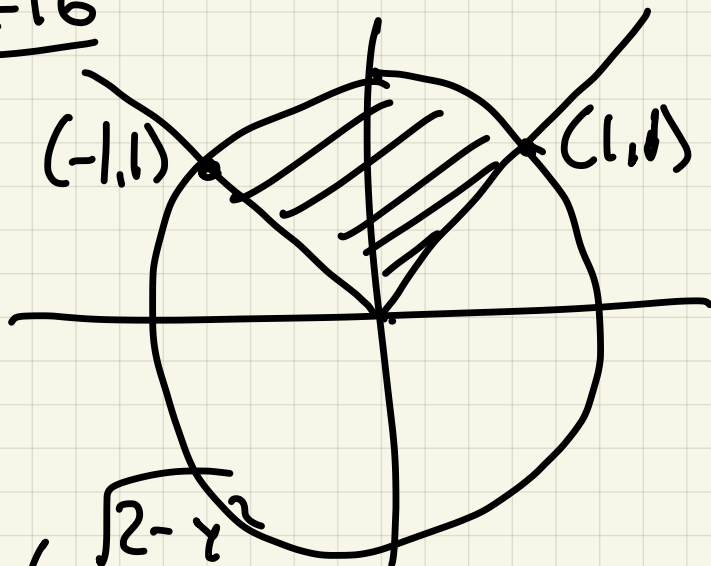


Quiz 16

1. $\int_{-1}^1 \int_{|x|}^{\sqrt{2-x^2}} (x+2) dy dx$

or

$$\int_0^1 \int_{-y}^y (x+2) dx dy + \int_1^{\sqrt{2}} \int_{-\sqrt{2-y^2}}^{\sqrt{2-y^2}} (x+2) dx dy$$



2. $\int_{\pi/4}^{3\pi/4} \int_0^{\sqrt{2}} r^2 \cos \theta + 2r dr d\theta$

3. $\frac{r^3}{3} \cos \theta + r^2 \Big|_0^{\sqrt{2}} = \frac{2\sqrt{2}}{3} \cos \theta + 2$

$$\int_{\pi/4}^{3\pi/4} \frac{2\sqrt{2}}{3} \cos \theta + 2 d\theta = \frac{2\sqrt{2}}{3} \sin \theta + 2\theta \Big|_{\pi/4}^{3\pi/4}$$

$$2 \left(\frac{3\pi}{4} - \frac{\pi}{4} \right) = \pi$$