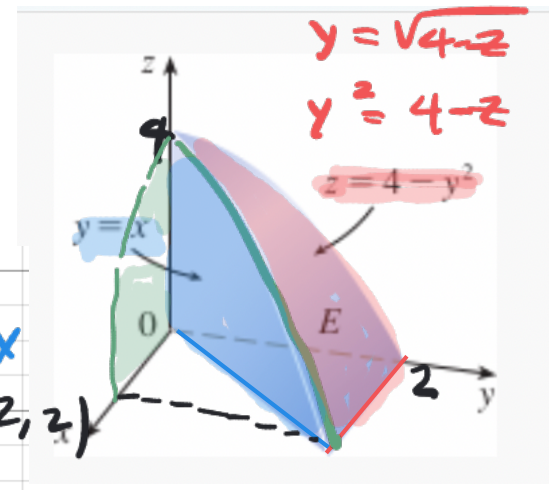
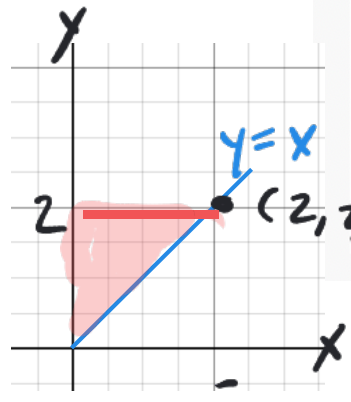
Quiz 7

Find the value of $\iiint_E xy\,dV$, where E is the solid shown



$$\int_0^2 \int_x^2 \int_0^{4-y^2} xy\,dz\,dy\,dx$$



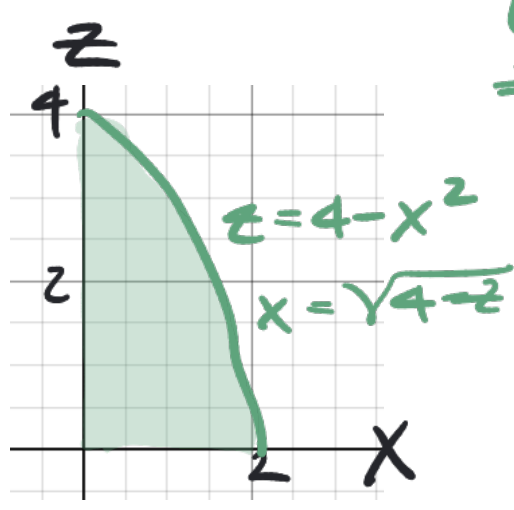
$$\int_0^2 \int_0^y \int_0^{4-y^2} xy\,dz\,dx\,dy$$

Intersection

$\begin{cases} z=4-y^2 \\ y=x \end{cases}$

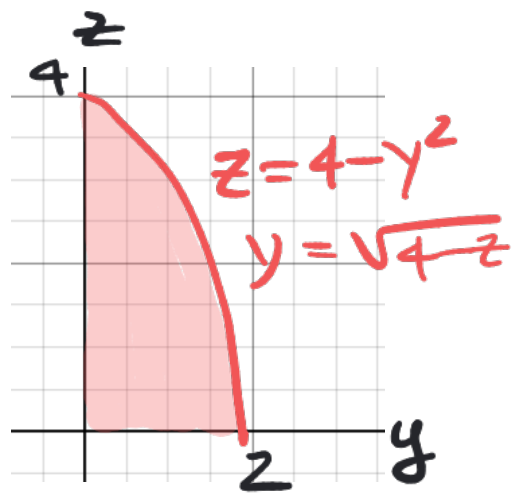
$\Rightarrow z=4-x^2$

$$\int_0^2 \int_0^{4-x^2} \int_x^{\sqrt{4-z}} xy\,dy\,dz\,dx$$



$$\int_0^4 \int_0^{\sqrt{4-z}} \int_x^{\sqrt{4-z}} xy\,dy\,dx\,dz$$

$$\int_0^2 \int_0^{4-y^2} \int_0^y xy\,dx\,dz\,dy$$



$$\int_0^4 \int_0^{\sqrt{4-z}} \int_0^y xy\,dx\,dy\,dz$$

3|8