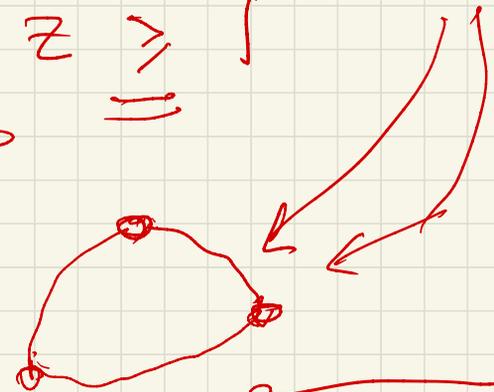
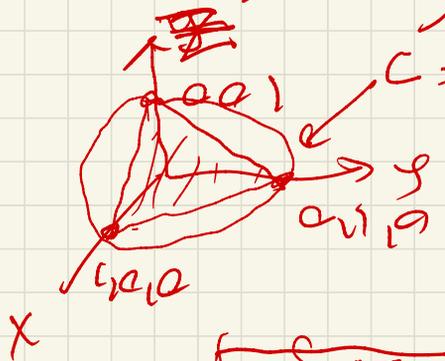



Q. $x^2 + y^2 + z^2 = 1$ S

$x + y + z \geq 1$
 $=$

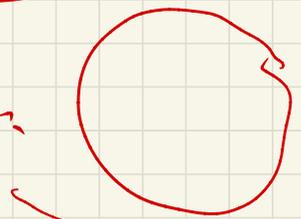


Corollary $\int_{\partial S} F \cdot dr = \int_{\partial \Sigma} F \cdot dr$

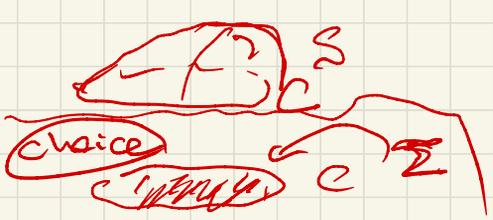
∂S is a circle through 3 points.

for any other surface Σ .

I think:
 Gauss
 for S



$C = \partial S = \partial \Sigma$
 $\int_{\partial S} F \cdot v$
 $=$
 \int_C for Σ



$\int_S \text{curl}(F) \cdot d\vec{S}$
 $=$
 $\int_{\Sigma} \text{curl}(F) \cdot d\vec{S}$

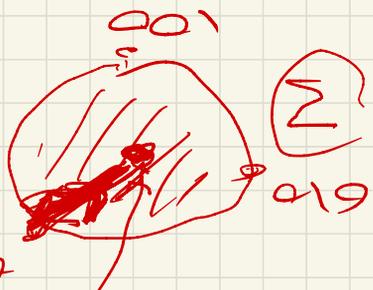


$$\text{curl}(F) =$$

$$= 2 \langle 1, 1, 1 \rangle$$

(?)

(?)



$$\sum \text{curl}(F) \cdot d\vec{S} = \sum \nu \, dA$$

$$\sum 2 \langle 1, 1, 1 \rangle \cdot \langle 1, 1, 1 \rangle \sqrt{3} \, dA$$

$$x + y + z = 1$$

$$\nu = \langle 1, 1, 1 \rangle / \sqrt{3}$$

area $R^2 \pi$

$$= -2\sqrt{3} \sum 1 \, dA$$

R radius of C

$$R^2 = \frac{4}{9} + \frac{1}{9} + \frac{1}{9} = \frac{6}{9} = \left(\frac{2}{3}\right)^2$$

$$\langle \frac{1}{3}, \frac{1}{3}, \frac{1}{3} \rangle - \langle 1, 0, 0 \rangle = \langle -\frac{2}{3}, \frac{1}{3}, \frac{1}{3} \rangle$$

$$-4\pi/3$$

$$= -2\sqrt{3} \frac{2\pi}{3} = -4\pi \sqrt{3}$$