

#1: Sexto Item

#2: $F(x, y, z) := [2 \cdot x - y, -y \cdot z^2, -z \cdot y^2]$

#3: $z := \sqrt{1 - x^2 - y^2}$

#4: z

#5: $\frac{d}{dx} z$

#6: $\frac{d}{dy} z$

#7: CURL(F(x, y, z))

#8: x :=

#9: y :=

#10:
$$\left[\begin{aligned} & \frac{y^3}{\sqrt{-x^2 - y^2 + 1}} - 2 \cdot y \cdot \sqrt{-x^2 - y^2 + 1}, -\frac{x \cdot y^2}{\sqrt{-x^2 - y^2 + 1}}, 2 \cdot x \cdot y \\ & + 1 \end{aligned} \right]$$

#11: El Curl es el rotor en este software

#12: $CURL(F(x, y, z)) \cdot \left[-\frac{d}{dx} z, -\frac{d}{dy} z, 1 \right]$

#13: 1

#14: Ahora la integral de linea

#15: F(x, y, z)

#16: $[2 \cdot x - y, y \cdot (x^2 + y^2 - 1), -y^2 \cdot \sqrt{-x^2 - y^2 + 1}]$

#17: F(COS(t), SIN(t), 0)

#18: $[2 \cdot \cos(t) - \sin(t), 0, 0]$

#19: $[\cos(t), \sin(t), 0]$

$$\#20: \frac{d}{dt} [\cos(t), \sin(t), 0]$$

$$\#21: [-\sin(t), \cos(t), 0]$$

$$\#22: [2 \cdot \cos(t) - \sin(t), 0, 0] \cdot [-\sin(t), \cos(t), 0]$$

$$\#23: \sin^2(t) - 2 \cdot \sin(t) \cdot \cos(t)$$

#24: Esta integral deben desarrollarla y no copiar el resultado directo del celular

$$\#25: \int_0^{2\pi} (\sin^2(t) - 2 \cdot \sin(t) \cdot \cos(t)) dt$$

$$\#26: \pi$$