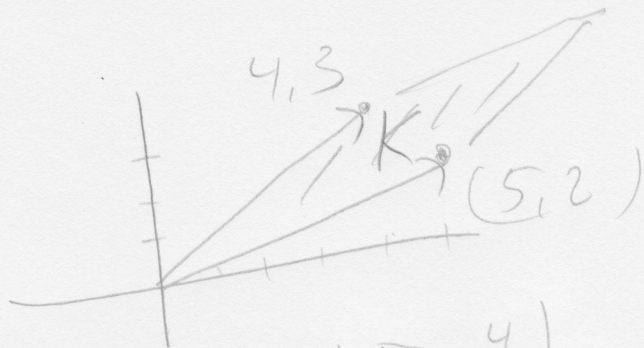


(3d)



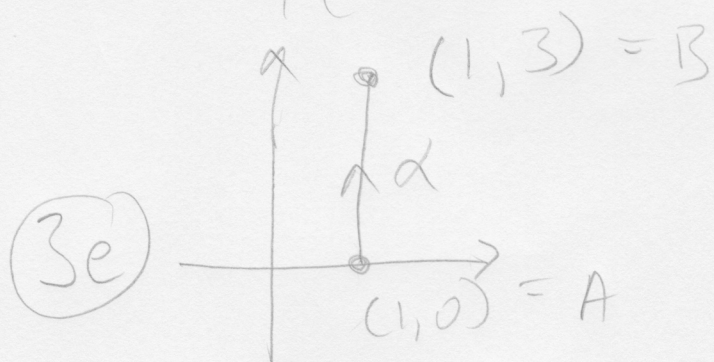
(6)

$$\text{area}(K) = \begin{vmatrix} 5 & 4 \\ 2 & 3 \end{vmatrix} = 15 - 8 = \boxed{7}$$

Gauss $\Rightarrow \int_{\eta} \mathbf{F} \cdot \mathbf{n} \, ds = \iiint_K \text{div } \mathbf{F} \, dx \, dy = \boxed{0}$

$$\int_{\eta} \mathbf{G} \cdot \mathbf{n} \, ds = \iiint_K \text{div } \mathbf{G} = \iiint_K -4 \, dx \, dy$$

$$= -4(\text{area } K) = -4 \cdot 7 = \boxed{-28}$$



(3e)

$\mathbf{G}$ e' conservativo
com $\hat{\varphi} = -x^2 - y^2 + xy$

$$\begin{aligned} \text{então } \int_{\gamma} \mathbf{G} \cdot d\mathbf{x} &= \hat{\varphi}(B) - \hat{\varphi}(A) = \\ &= \hat{\varphi}(1, 3) - \hat{\varphi}(1, 0) = (-1 - 9 + 3) - \\ &(-1 - 0 + 0) = \boxed{-8} \end{aligned}$$