Integrazione per parti

Sia $D \subseteq \mathbb{R}^3$ aperto regolare, sia $f : D \to \mathbb{R}$ di classe $C^1$. Allora integrare per parti

$$\int_D \frac{\partial f}{\partial x} (3xy - 2x^2) \, dx\, dy\, dz$$

$$\int_D \frac{\partial f}{\partial y} (3xy - 2x + 5z) \, dx\, dy\, dz$$

$$\int_D \frac{\partial f}{\partial z} (x^2 - xyz) \, dx\, dy\, dz$$

$$\int_D \frac{\partial f}{\partial x} (3xy - z^2 + y) \, dx\, dy\, dz$$

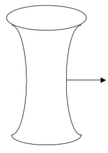
$$\int_D \frac{\partial f}{\partial y} (2x - y^4 + yz^3) \, dx\, dy\, dz$$

Teo di Stokes

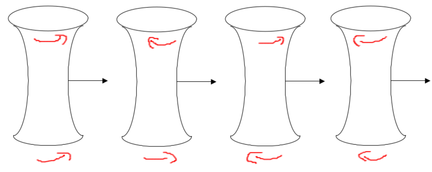
1) Data la superficie orientata

dire quale è l'orientamento indotto sul bordo

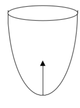
2) Data la superficie orientata



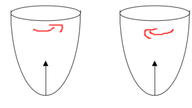
dire quale dei seguenti è l'orientamento indotto sul bordo

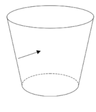


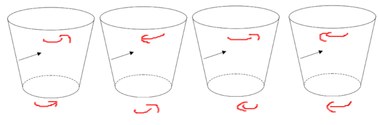
Data la superficie



dire quale è l'orientamento indotto sul bordo







Sia $(\Sigma, \varphi)$ superficie regolare orientata. Sia $f : \Sigma \to \mathbb{R}$ una funzione $C^1$. Scrivere come integrale di superficie.

$$\int_{\partial\Sigma} f \, dx \qquad f(x,y,z) = 3x^2 + yz$$

$$\int_{\partial\Sigma} f \, dy \qquad f(x,y,z) = 2xy^4 - 3z$$

$$\int_{\partial\Sigma} f \, dx \qquad f(x,y,z) = 2xz^2 + 5yz$$

$$\int_{\partial\Sigma} f \, dx \qquad f(x,y,z) = xyz - 2x$$

$$\int_{\partial\Sigma} f \, dy \qquad f(x,y,z) = x - y + 3z$$