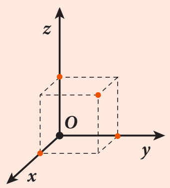
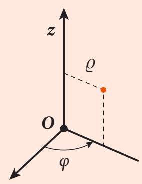
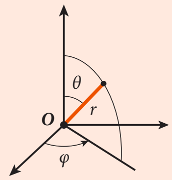
Coordinate cartesiane, cilindriche e polari

	Coordinate cartesiane (x, y, z)	**Coordinate cilindriche (ϱ, φ, z)**	**Coordinate polari (r, θ, φ)**
			
$d\vec{l}$	dx, dy, dz	$d\varrho, \varrho d\varphi, dz$	$dr, r d\theta, r \operatorname{sen}\theta d\varphi$
$\operatorname{grad} f$	$(\nabla f)_x = \frac{\partial f}{\partial x}$ $(\nabla f)_r = \frac{\partial f}{\partial y}$ $(\nabla f)_z = \frac{\partial f}{\partial z}$	$(\nabla f)_\rho = \frac{\partial f}{\partial \rho}$ $(\nabla f)_\varphi = \frac{1}{\varrho}\frac{\partial f}{\partial \varphi}$ $(\nabla f)_z = \frac{\partial f}{\partial z}$	$(\nabla f)_r = \frac{\partial f}{\partial r}$ $(\nabla f)_\theta = \frac{1}{r}\frac{\partial f}{\partial \theta}$ $(\nabla f)_\varphi = \frac{1}{r \operatorname{sen}\theta}\frac{\partial f}{\partial \varphi}$
$\operatorname{div}\vec{v}$	$\frac{\partial v_x}{\partial x} + \frac{\partial v_y}{\partial y} + \frac{\partial v_z}{\partial z}$	$\frac{1}{\varrho}\frac{\partial(\varrho v_\varrho)}{\partial \varrho} + \frac{1}{\varrho}\frac{\partial v_\varphi}{\partial \varphi} + \frac{\partial v_z}{\partial z}$	$\frac{1}{r^2}\frac{\partial(r^2 v_r)}{\partial r} + \frac{1}{r \operatorname{sen}\theta}\frac{\partial(\operatorname{sen}\theta v_\theta)}{\partial \theta} +$ $+ \frac{1}{r \operatorname{sen}\theta}\frac{\partial v_\varphi}{\partial \varphi}$
$\operatorname{rot}\vec{v}$	$\begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ \frac{\partial}{\partial x} & \frac{\partial}{\partial y} & \frac{\partial}{\partial z} \\ v_x & v_y & v_z \end{vmatrix}$	$(\operatorname{rot}\vec{v})_\varrho = \left(\frac{1}{\varrho}\frac{\partial v_z}{\partial \varphi} - \frac{\partial v_\varphi}{\partial z}\right)$ $(\operatorname{rot}\vec{v})_\varphi = \left(\frac{\partial v_\varrho}{\partial z} - \frac{\partial v_z}{\partial \varrho}\right)$ $(\operatorname{rot}\vec{v})_z = \frac{1}{\varrho}\left(\frac{\partial(\varrho v_\varphi)}{\partial \varrho} - \frac{\partial v_\varrho}{\partial \varphi}\right)$	$(\operatorname{rot}\vec{v})_r = \frac{1}{r \operatorname{sen}\theta}\left(\frac{\partial(\operatorname{sen}\theta \cdot v_\varphi)}{\partial \theta} - \frac{\partial v_\theta}{\partial \varphi}\right)$ $(\operatorname{rot}\vec{v})_\theta = \frac{1}{r \operatorname{sen}\theta}\frac{\partial v_r}{\partial \varphi} - \frac{1}{r}\frac{\partial(r\, v_\varphi)}{\partial r}$ $(\operatorname{rot}\vec{v})_\varphi = \frac{1}{r}\left(\frac{\partial(r v_\theta)}{\partial r} - \frac{\partial v_r}{\partial \theta}\right)$