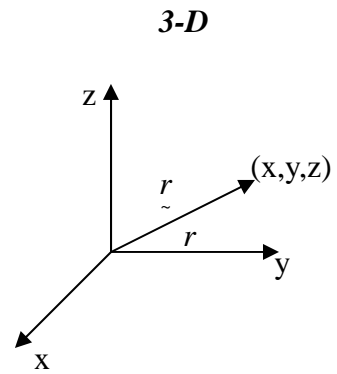
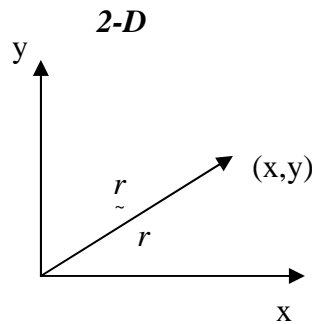
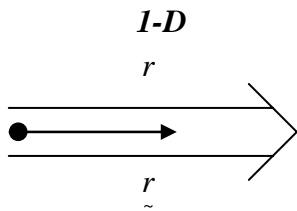


Divergence of position vector and gradient of radial function

	1-D	2-D	3-D
r	$\sqrt{x^2}$	$\sqrt{x^2 + y^2}$	$\sqrt{x^2 + y^2 + z^2}$
\vec{r}	$x\vec{i}$	$x\vec{i} + y\vec{j}$	$x\vec{i} + y\vec{j} + z\vec{k}$
∇r	$\frac{\vec{r}}{r}$	$\frac{\vec{r}}{r}$	$\frac{\vec{r}}{r}$
$\nabla \cdot \vec{r}$	1	2	3
$\nabla \times \vec{r}$	0	0	0



$$\iint \vec{r} \cdot \vec{n} dS = \iiint \nabla \cdot \vec{r} dV = 3V$$

$$\oint \vec{r} \cdot \vec{n} ds = \iint \nabla \cdot \vec{r} dA = 2A$$

$$\oint \vec{r} \cdot \vec{t} ds = \iint \nabla \times \vec{r} \cdot d\vec{A} = 0$$

