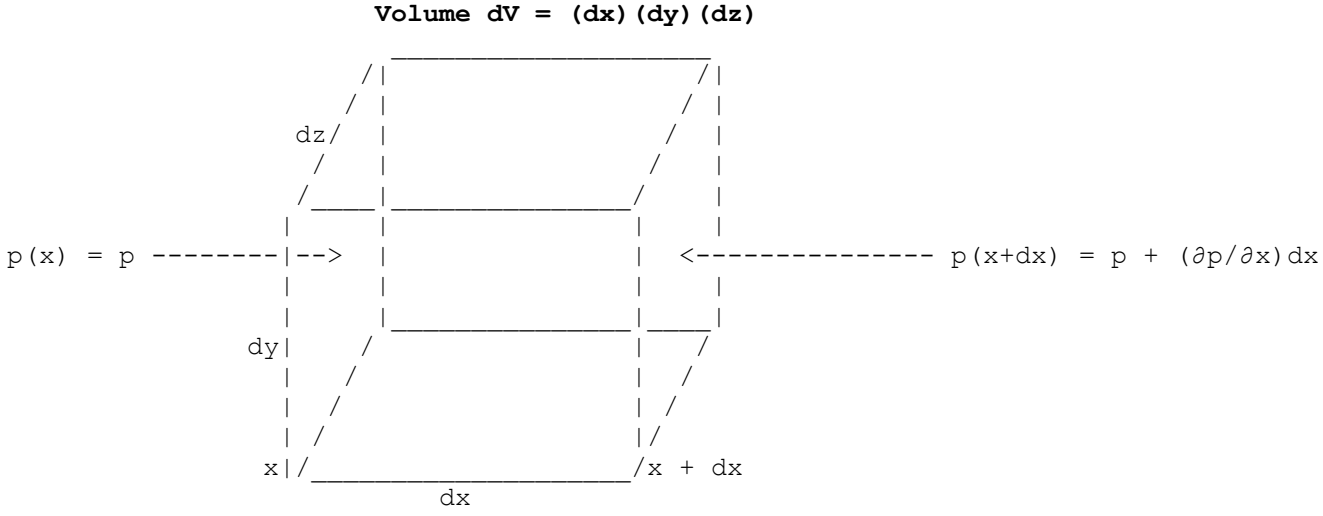
The Net Pressure Force per unit Volume of a Fluid is:
= -**Gradient**(pressure)

The Gradient, a Vector, points in the Direction of Maximum Increase wrt Distance.
The Gradient's Magnitude is The Rate of Change wrt Distance in this Direction.
The Components of the Gradient are the Partial Derivatives wrt Distance.
The Pressure Force points in the Direction of Maximum Decrease of Pressure, ie ...
... from High to Low Pressure.

The x-component of the Net Pressure Force on the Fluid in Volume dV = (dx)(dy)(dz):
$F_x = p(dy)(dz) - [p + (\partial p/\partial x)dx](dy)(dz) = -(\partial p/\partial x)(dx)(dy)(dz)$

The x-component of the Net Pressure Force per unit Volume = $-(\partial p/\partial x)$



The Net Pressure Force per unit Volume = $[-(\partial p/\partial x)]\mathbf{i} + [-(\partial p/\partial y)]\mathbf{j} + [-(\partial p/\partial z)]\mathbf{k}$
= -**Gradient**(p)