Write down the definition of divergence (div). Find the div of the given vector function $\mathbf{v}=(z-y)\mathbf{i}+(x-z)\mathbf{j}+(y-x)\mathbf{k}$. [104 高應大機械乙 5(1)]

[解]若$\mathbf{v}=v_1\mathbf{i}+v_2\mathbf{j}+v_3\mathbf{k}$，則div $\mathbf{v}=\nabla\cdot\mathbf{v}=\frac{\partial v_1}{\partial x}+\frac{\partial v_2}{\partial y}+\frac{\partial v_3}{\partial z}$

此題$v_1=z-y$, $v_2=x-z$, $v_3=y-x$，因此$\nabla\cdot\mathbf{v}=0$