

Exercise

Killing vector field 滿足 $\nabla_i X_j + \nabla_j X_i = 0$

$g^{ij}(\nabla_i X_j + \nabla_j X_i) = 0$, 因為 g^{ij} 是對稱的 , 且 $g^{ij}(\nabla_i X_j) = \text{div}(X)$

所以 $2\text{div}(X) = 0 \Rightarrow \text{div}(X) = 0$