

Exercise

Let (M, g) be a Riemannian manifold and $\lambda > 0$. Consider $\tilde{g} = \lambda g$. Show that:

- (a) g and \tilde{g} have the same Levi-Civita connection and the same curvature tensor.
- (b) For the sectional curvatures, we have: $\tilde{K} = \frac{1}{\lambda^2} K$.