Homework problems #10

1. Prove that the Lie derivative satisfies the Leibniz rule:

\[ \Delta_{\epsilon} (A^\mu \nu B^\lambda) = A^\mu \nu \Delta_{\epsilon} B^\lambda + (\Delta_{\epsilon} A^\mu \nu) B^\lambda \]

and that it commutes with the contraction:

\[ \delta^\lambda_{\nu} \Delta_{\epsilon} T^{\mu \nu}_{\lambda} = \Delta_{\epsilon} T^{\mu \lambda}_{\lambda}. \]