

HOMEWORK 5

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Problem 0.1. Suppose $\pi_1 : M \rightarrow N_1$ and $\pi_2 : M \rightarrow N_2$ are surjective submersions, constant on each other's fibers. Show that N_1 and N_2 are diffeomorphic.

Problem 0.2. Let G be a Lie group. Show that there is a diffeomorphism $TG \simeq G \times T_e G$ (hint: use left translation).

Lee: 2.8 (p.31), 5-8, 5-9, 5-13, 7-5, 7-8, 7-9, 7-13