



LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN

MATHEMATISCHES INSTITUT



Summer term 2017

Prof. D. Kotschick
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Topology II

Sheet 7

Exercise 1. Show that deleting a point from a manifold does not affect orientability of the manifold.

Exercise 2. Show that $M \times N$ is orientable if and only if M and N are both orientable.

Exercise 3. Let M_g be the closed orientable surface of genus g . Show that if a map $f : M_g \rightarrow M_h$ of nonzero degree exists then $g \geq h$. Conversely show that if $g \geq h$ then there exists a map $f : M_g \rightarrow M_h$ of degree 1.

Exercise 4. Show that $H_c^0(X; G) = 0$ if X is path-connected and noncompact.

Hand in: Tuesday, June 27th, during the exercise class.