

## ADDENDUM TO solutions 04.pdf

Since we use the result from Munkres repeatedly, we shall state explicitly the case we need in the solutions:

THEOREM. Let  $X$  be a topological space, and let  $R$  be an equivalence relation on  $X$ . Define  $R'$  on  $X \times [0, 1]$  by  $(x, t) \sim_{R'} (x', t') \iff t = t'$  and  $x \sim_R x'$ . Then the canonical map

$$\theta: X \times [0, 1] / R' \longrightarrow (X/R) \times [0, 1]$$
$$\theta [x, t] = ([x], t)$$

is a homeomorphism.  $\square$

Reference: Exercise 11 on page 186 of Munkres, Topology.