

拓扑习题-23

1. 证明 fibered coproduct 若存在则在差一个同构的意义下是唯一的。
2. 将 fibered coproduct 的定义中的箭头反向, 从而给出 fibered product 的定义。
3. Munkres 的 Topology 的第 68 节的习题 2:
 2. Let $G = G_1 * G_2$, where G_1 and G_2 are nontrivial groups.
 - (a) Show G is not abelian.
 - (b) If $x \in G$, define the *length* of x to be the length of the unique reduced word in the elements of G_1 and G_2 that represents x . Show that if x has even length (at least 2), then x does not have finite order. Show that if x has odd length, then x is conjugate to an element of shorter length.
 - (c) Show that the only elements of G that have finite order are the elements of G_1 and G_2 that have finite order, and their conjugates.