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Algebraic Topology, No. 6
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Sketches of solutions to selected problems

1. This is "Grillet, *Algebra*, Prop. 14.5.1", for example.

   There is a proof in "Hatcher, *Algebraic Topology* (http://www.math.cornell.edu/ hatcher/#ATI)" as well; it is in between 2.44 and 2.45; it contains less detail than Grillet, but the ideas are mentioned.

2. In Grillet, there is a proof of the short 5-lemma (14.5.4); the long one is very similar (and an exercise in the book).

   In Hatcher, the Five-Lemma is proved as part of Theorem 2.27.