

GUIDE TO EXERCISES 03-05

EXERCISES 03

Top Priority: 1, -3, 5-9, 11

[Notes: The proof of 1(c) may be challenging.]

Secondary priority: 4 (generalization of algebraic contracting homotopy), 10 (example to illustrate the sorts of 2-cycles related to surface integrals).

Optional: 12.

EXERCISES 04

Top Priority: 0-1, 3 (second one), 4-7, 11

Secondary priority: 2-3 (first one) (generalization of cones and suspensions to arbitrary spaces — this requires a subtle fact about products and quotient topologies), 8 (examples of finite order homology classes), 9 (a consequence of 8), 10 (stand and problem, solved using the viewpoint of this course).

Optional: 12.

EXERCISES 05.

Top Priority: 1, 2(a-b), 3, 5-7, 11, 9(a-c)

Secondary priority: 2(c) (more difficult than a+b),
10 (also ~~req~~ solved more easily with additional
ideas shown in the solution).

Optional:

4, 8, 12, 9(d-h). — 8 & 12 — concern a topic not
treated in the course (but in some directory files),
while 9(d-h) involve Exercise 04.3 (first).