Rotman algebraic topology, ed. 4 errata

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0 Introduction

- **Page 9, Exercise 0.12:** The category $\mathcal{M}$ should be the *arrow category*. In particular, the morphisms should be the commutative squares, not merely the pairs (h, k).
- **Page 10, fourth-to-last line above Exercise 0.14:** In the equation for $g(f(x))$, replace both occurrences of $g(a)b$ with $bg'(a)$.

1 Some Basic Topological Notions

- **Page 15, proof of Theorem 1.3:** The first line of the proof is in italics, and almost certainly should not be.
- **Page 30, Exercise 1.34, Part (iv):** The statement that $f : X \to Y$ is *homotopic* to $r \circ i$ should be revised to the statement that $f : X \to Y$ *coincides* with $r \circ i$.

2 Simplexes

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3 The Fundamental Group

- **Page 40, Exercise 3.1:** Immediately preceding the semicolon in the second sentence is the phrase "for $i = 0.1$." The period between 0 and 1 should clearly be a comma.
- **Page 53, fifth line from the top, in the parenthetical statement:** The fundamental group $\pi_1(R^1, 1)$ should be changed to $\pi_1(S^1, 1)$.

4 Singular Homology

- **Page 82, Exercise 4.14, displayed equation:** The final expression $\operatorname{cls}\alpha + \operatorname{cls}\beta + \operatorname{cls}\gamma$ only has meaning when α, β, γ are cycles, i.e., are closed. Thus the exercise is to show the first equality, not the second equality (which does not, in general, make sense).