Due date: Wednesday, Feb. 19.

Reading: Chapter 3.1-2

1. [10 points] Ex. 2.12 (p. 73).

2. [10 points] Ex. 3.1 (p. 85).

3. [5 points] Ex. 3.2 (p. 86).

   **Note:** This problem was stated incorrectly in the published book; the following correction appears in the Errata.

   In Sec. 3.1.1 we constructed the parallel-transport gauge of Eq. (3.9) for the system described by Eq. (3.2). Show that Eq. (3.2) corresponds to a twisted parallel-transport gauge. There are two other choices for a twisted parallel-transport gauge starting from the same $|\bar{u}_a\rangle$. What are they?

4. [15 points] Ex. 3.4 (p. 86).