These are some common mistakes on Midterm 1, we hope that this can help you with future assignments and exams.

Q1: Translation

- Using C-style closing parentheses (placed on separate lines)

Part(a): floor

- Not using or incorrect use of given floor function

Part(b): (f x y z)

- Generally well-done

Q2: Concert Question

Part(a): Contract

- Using type Int (should be Num) for ticket-price and budget
- Using type Num (should be Nat) for friends-going
- Using type Int for friends-going but did not include friends-going ≥ 0 in the requirement
- Missing requirements for ticket-price

Part(b): check-expect

- Generally well-done

Part(c): constants

- Missing constants for number of friends
- Using inflexible names
  (e.g. (define fifty-percent-budget 0.5) making constants hard to change)

Part(d): implementation with boolean operators

- Not using constants defined in 2c)
Part(e): implementation with cond
- Using unnecessary comparisons (e.g. `(boolean=? final-tour? true)` can be replaced with just `final-tour?`)
- Uncaught conditions (e.g. missing one or more `[else false]`)
- Wrong condition order such that some conditions never get evaluated (e.g. having `(>= friends-going 1) before (>= friends-going 5)`)
- Using `[else (cond [...])]`

Q3: Stepping Problem

Part(a)
- Not substituting in values of all parameters in the first step (e.g. did not substitute in `x,y,z` in one step)

Part(b)
- Generally well-done

Part(c)
- First step (e.g. should be `(g (g (-4 3)))`)

Q4: Rope-Skipping Question

Part(a): Purpose
- Not explicitly referencing parameter names in Purpose
- Missing(or incomplete) function header

Part(b): constants
- Generally well-done

Part(c): cals-burned-skipping
- Not using constants for breakpoints
- Not using the order of the tests to simplify the individual questions (e.g. get rid of the `and`)
- Using `<` when it should be `<=`
Part(d): cals-burned-skipping-friendly

- Not using `cals-burned-skipping` in part(c) as a helper function
- **Multiplying** duration by 60 instead of **dividing** by 60
- **Dividing** pounds by **kg-per-pound** instead of **multiplying**
- Trying to transform the result of `cals-burned-skipping` instead of transforming the arguments to `cals-burned-skipping`

Q5: Tracing Conds

- Not making a clear distinction between **symbols** and **strings**

Part(a-h)

- Type of mistakes varied
- Not realizing that the inner cond can produce an "All questions were false" error

Part(i): Contract

- Missing requirements
  (e.g. if a and b are the same symbol, then d can’t be 3)