We normally publish the post-mortem for a midterm after it has been marked and released. Here is a list of common errors provided by the graders for the midterm.

**Question 1**
- Many students included the negation of the sum within the sum itself, resulting in alternating signs between terms. The formula for entropy is defined such that the entire summation is negated.

**Question 2**
- Many students began to evaluate expressions within \((\text{cond } [\text{else ...}])\) without first removing them from the \text{cond} expression.
- Some students did not place separators (such as "=>") between steps, making it difficult to discern which simplifications were done before others.
- Many students did not substitute all arguments to function applications at once, creating many unnecessary steps.
- Many students had syntactically invalid steps such as \((\text{cond } [\text{true x}]) \Rightarrow (\text{cond } [x])\)
- Overall, there were many cases of skipping steps.

**Question 3**
- In part (b), many students confused \((\text{rest } (\text{list q3}))\) with \((\text{rest q3})\).
- In part (c), many students wrote \((\text{cons empty})\) (which is syntactically invalid), instead of \((\text{cons empty empty})\).
- In part (d), many students were missing the first \((\text{first ...})\) application at the beginning of their expression.

**Question 4**
- Part (a):
  - Many students did not process positions, \((\text{circle-radius } (\text{first losh}))\), \((\text{rectangle-bottom-left } (\text{first losh}))\), or \((\text{rectangle-top-right } (\text{first losh}))\) correctly in their templates.
  - Many students did not correctly process the rest of their lists by recursively applying \text{listof-shape-template}.
• Part (b):
  – Many students had an incorrect contract.
  – Many students had incorrect syntax for function calls.
  – Some students did not use the correct form for accessing fields of a structure. The correct form is (structname-fieldname struct).

• Part (c):
  – Many students did pairwise comparisons throughout the list or compared only the first element to the rest instead of comparisons of every distinct pair of shapes.
  – Many students did not produce a Boolean value in the base case.
  – Some students attempted to implement the already given functions.
  – Many students did not reference parameters by name in their purpose.
  – Many students did not provide examples.

Question 5

• Many students were confused by the parameter points-so-far. The purpose of this parameter was to keep track of how many points had already been processed, to assist in either counting up to n or counting down from n.

• Many students attempted to incorporate posn structs into their solutions where processing individual coordinates would have been simpler.

• Many students used the wrong inequality operator for distance comparisons (< instead of <=).

• Many students had an incorrect base case, producing some other value than the approximation of π.

• Some students processed n as if it was a list of provided points instead of a number of points to generate.

• Some students divided by 0 in the base case (with n equal to 0)

Question 6

• A large portion of students did not provide any testing whatsoever for polynomial-add.

• Students did not process cancelling terms as they should. Because terms cannot have a coefficient of 0, this case should have been handled separately from normal addition.

• Many students did not use the correct form for accessing fields of a structure. The correct form is (structname-fieldname struct).