

1. Study Hailperin, Chapter 6.
2. Do Hailperin Exercise 6.7.

Modify the exercise to write a three-pile game of Nim. The representation described in the book for a two-pile game of Nim is a single integer of the form $2^n \times 3^m$ where n is the number of coins in the first pile and m is the number of coins in the second pile. For the three-pile game of Nim, the game state will be a single integer of the form $2^n \times 3^m \times 5^k$ where n is the number of coins in the first pile, m is the number of coins in the second pile, and k is the number of coins in the third pile. The game is still played with two opponents, human and computer.

Notice that you must implement `exponent-of-in` as a function with two parameters, as it will be tested separately from the game.

For your programming convenience, here is a link to the two-pile Nim game with the implementation as a two-digit number with the 10's place the number in the first pile and the 1's place the number in the second pile. Although this implementation restricts the number of items in each pile to be no greater than nine, your implementation with `exponent-of-in` will have no such restriction.

<http://www.cslab.pepperdine.edu/warford/cosc450/a05.rkt>

Incorporate your function in a complete Nim game and hand it in as file `a05.rkt`.