

**HOMEWORK ASSIGNMENT 7A****DUE WEDNESDAY AUGUST 16, 2006 AT 11:59 PM**

1. Exercises 3.50, 3.51, 3.52, 3.53, 3.54, 3.55, 3.56, 3.64, 3.66, 3.68

2. Write and test two functions to manipulate nonnegative proper fractions. The first function, `fract-stream`, will take as its argument a list of two nonnegative integers, the numerator and the denominator, in which the numerator is less than the denominator. It will return an infinite stream of decimal digits representing the decimal expansion of the fraction. The second function, `approximation`, will take two arguments: a fraction stream and a nonnegative integer `numdigits`. It will return a list (not a stream) containing the first `numdigits` digits of the decimal expansion.

`(fract-stream '(1 7))` should return the stream representing the decimal expansion of  $\frac{1}{7}$ , which is 0.142857142857142857...

`(stream-car (fract-stream '(1 7)))` should return 1.

`(stream-car (stream-cdr (stream-cdr (fract-stream '(1 7)))))` should return 2.

`(approximation (fract-stream '(1 7)) 4)` should return (1 4 2 8).

`(approximation (fract-stream '(1 2)) 4)` should return (5 0 0 0).