Pre-Lab Exercise 2.1 The approximation is accurate to 4 decimal places for $k = 11$.

```
(define (cont-frac-r n d k)
  (define (cf i)
    (if (> i k)
0
(/ (n i)
   (+ (d i)
      (cf (+ i 1))))))
  (cf 1))

(define (cont-frac-i n d k)
  (define (cf-iter k sum)
    (if (= k 0)
sum
(cf-iter (- k 1)
 (/ (n k)
    (+ (d k)
       sum)))))
  (cf-iter k 0))
```

Lab Exercise 2.2 The approximation is accurate to 2 decimal places for k approximately 120.

Pre-Lab Exercise 2.3

```
(define (atan-cf k x)
  (cont-frac (lambda (i)
      (if (= i 1)
   x
   (square (* (- i 1) x))))
     (lambda (i)
       (- (* 2 i) 1.0))
     k))
```

Lab Exercise 2.4 Given (`define pi (estimate-pi 10000)`) where 10000 is arbitrarily chosen.

procedure	k	x	value
atan-cf	10	1	.785398135111635
atan-cf	30	1	.7853981633974483
atan-cf	100	1	.7853981633974483
atan		1	.7853981633974483
atan-cf	10	π	1.258297497839761
atan-cf	30	π	1.2626364386129623
atan-cf	100	π	1.2626364544599773
atan		π	1.262636454459977

Pre-Lab Exercise 2.5

```
(define (nested-acc op r term k)
  (define (na i)
    (if (> i k)
        r
        ((op i) (term i) (na (+ i 1))))))
  (na 1))

(define (f k x)
  (nested-acc (lambda (i)
```

```
      (lambda (a b)
        (sqrt (+ a b))))
    0
    (lambda (i) x)
    k))
```

Lab Exercise 2.6 The approximation is accurate to 4 decimal places for $k = 10$.