E5

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Dæmi 1

```scheme
;; Notkun: (RealPowRecursive x y)
;; Fyrir: x er rauntala, y er heiltala
;; Gildi: x í veldinu af y
;;
(define (RealPowRecursive x y)
  (if (= y 0)
      1.0
    (if (= y 1)
        x
      (if (= (remainder y 2) 0)
          (RealPowRecursive (* 1.0 x x) (quotient y 2))
          (* x (RealPowRecursive (* 1.0 x x) (quotient y 2)))))))
```

Keyrsla:

```
> (RealPowRecursive (+ 1 (expt 10 -10)) (RealPowRecursive 10 10))
(RealPowRecursive 6 2)
2.7182820434752477
36.0
```

Dæmi 2

```scheme
;; Notkun: (transpose-list z)
;; Fyrir: z er listi jafnlangra lista,
;;        z=((x11 x12 ... x1N)
;;           (x21 x22 ... x2N)
;;             .
;;             .
;;           (xM1 xM2 ... xMN))
;; Gildi: Listinn sem er byltingin
;;        (transpose) af z, þ.e.
;;        ((x11 x21 ... xM1)
;;         (x12 x22 ... xM2)
;;             .
;;             .
;;         (x1N x2N ... xMN))
(define (transpose-list z)
  ;; Notkun: (hjalp x)
  ;; Fyrir: x er listi af sömu lengd og z
  ;; með innri lista sem eru allir jafn langir og
  ;; eru af gildum af lengd z eða styttri.
  ;; Gildi: transpose af z
  (define (hjalp x)
    (if (eqv? 0 (length (car x)))
        '()
        (cons
          (map (lambda (x) (car x)) x)
          (hjalp (map (lambda (x) (cdr x)) x)))))
  (hjalp z))
```

Keyrsla:

```
> (transpose-list '((1 2 3) (4 5 6) (7 8 9)))
(transpose-list '((4 3) (2 1)))
((1 4 7) (2 5 8) (3 6 9))
((4 2) (3 1))
```