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#5

```racket
#lang racket


(define (sumlistunder7 List)
    (cond
        ((null? List) 0)
        ((list? (car List)) (sumlistunder7 (car List)))
        ((even? (car List)) (sumlistunder7 (cdr List)))
        ((< 6 (car List)) (sumlistunder7 (cdr List)))
        ((list? List) (+ (car List) (sumlistunder7(cdr List))))
        (else 0)
    ))

(sumlistunder7 '( 9 2 3 4 5))
(sumlistunder7 '( 9 2 3 (4 5)))
```

Welcome to DrRacket, version 7.8 [3m].
Language: racket, with debugging; memory limit: 128 MB.
8
8
>

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#6

```racket
#lang racket
;assignment1 #6

(define (deleteprelast List)
    (cond
        ((null? List) '())
        ((= (length List) 2) (cdr List))
        ( (cons (car List) (deleteprelast (cdr List))))))
    ))

(deleteprelast '(a b (c d) e))
(deleteprelast '(a b c d e))
```

Welcome to DrRacket, version 7.8 [3m].
Language: racket, with debugging; memory limit: 128 MB.
'(a b e)
'(a b c e)
>

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#7

```racket
#lang racket
(define (fullreverse List)
  (if (list? List)
      (reverse (map fullreverse List))
      List))

(fullreverse '( (a b) (c d) a b))

(fullreverse '( a b (c) b d))
```

Welcome to DrRacket, version 7.8 [3m].
Language: racket, with debugging; memory limit: 128 MB.
'(b a (d c) (b a))
'(d b (c) b a)
>

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#8

```racket
#lang racket
(define (leaflist List)
  (reverse(flatten List)))

(leaflist  '(((1 2) (3 4)) ((1 2) (3 4))))
```

Welcome to DrRacket, version 7.8 [3m].
Language: racket, with debugging; memory limit: 128 MB.
'(4 3 2 1 4 3 2 1)
>

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#9

```racket
#lang racket

(define (depthhelp List highest count)
  (cond
    [(null? List) (if (< highest count) count highest)]
    [(list? (car List))
     (depthhelp (car List) highest (+ count 1))]
    [else (depthhelp (cdr List) highest count)]
  )
)

(define (depth List)
  (cond
    [(empty? List) 1]
    [else (depthhelp List 0 1)]
  )
)

(depth '(I J ((K) L) M))
```

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#10

```racket
#lang racket
(define (powerset List)
  (combinations List))

(powerset '(a b c))
```

Welcome to DrRacket, version 7.8 [3m].
Language: racket, with debugging; memory limit: 128 MB.
'(() (a) (b) (a b) (c) (a c) (b c) (a b c))
>