p. 214

7. Describe an algorithm that takes as input a list of n integers and finds the location of the last even integer in the list or returns 0 if there are no even integers in the list.

p. 215

36. Use the bubble sort to sort 6, 2, 3, 1, 5, 4, showing the lists obtained at each step.

p. 228

2. Determine whether each of these functions is $O(x^2)$.

a) $f(x) = 17x + 11$ b) $f(x) = x^2 + 1000$

c) $f(x) = x \log x$ d) $f(x) = x^4 / 2$

e) $f(x) = 2^x$ f) $f(x) = \lfloor x \rfloor \cdot \lceil x \rceil$

p. 229

30. Show that each of these pairs of functions are of the same order.

a) $3x + 7$, x

b) $2x^2 + x - 7$, x^2

c) $\lfloor x + 1/2 \rfloor$, x

d) $\log(x^2 + 1)$, $\log_2 x$

e) $\log_{10} x$, $\log_2 x$

p.241

2. Give a big-O estimate for the number additions used in this segment of an algorithm.

```
t := 0
for i := 1 to n
for j := 1 to n
t := t + i + j
```

p. 242

7. Suppose that an element is known to be among the first four elements in a list of 32 elements. Would a linear search or a binary search locate this element more rapidly?