アルゴリズムイントロダクション解答集

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2.

I.   1. 略.

2. Rewrite the INSERTION-SORT procedure to sort into nonincreasing instead of non-decreasing order.

ソースコード 1   DESC-INSERTION-SORT(*A*)

```
1 for j = 2 to A.length
2     key = A[j]
3     i = j - 1
4     while i > 0 && A[i] < key
5         A[i+1] = A[i]
6         i = i - 1
7     A[i+1] = key
```

3. Write pseudocode for ***linear search***.

ソースコード 2   LINEAR-SEARCH(*A* and *v*)

```
1 for j = 2 to A.length
2     key = A[j]
3     i = j - 1
4     while i > 0 && A[i] < key
5         A[i+1] = A[i]
6         i = i - 1
7     A[i+1] = key
```

4. Consider the problem of adding two n-bit binary integers, stored in two n-element arrays A and B. The sum of the two integers should be stored in binary form in an $(n+1)$-element array C. State the problem formally and write pseudocode for adding the two integers.

ソースコード 3   BINARY-PLUS-OPERATOR(*A* and *B*)

```
1 for j = 2 to A.length
2     key = A[j]
3     i = j - 1
4     while i > 0 && A[i] < key
5         A[i+1] = A[i]
```

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```
6           i = i - 1
7       A[i+1] = key
```

II. 次に、宇宙が 10 次元の場合を考えよう。

1. それを計算せよ。

2. (**??**) の解を用いてあれを証明せよ。