(1) TODO: Problem Statement

Algorithm 1 TODO

```
1: function PlacePostOffices(H, n)
2:     P ← ∅
3:
4:     Append(P, H[1] + 100)
5:     j ← 1
6:     for i from 2 to n do
7:         if |H[i] - P[j]| > 100 then
8:             Append(P, H[i] + 100)
9:             j ← j + 1
10:        end if
11:    end for
12:
13:    return P
14: end function
```

(2) TODO: Problem Statement

Algorithm 2 TODO

```
1: function MaxProfit(B, S, n)
2:     buy ← 0
3:     sell ← 0
4:     for i from 1 to n + 1 do
5:         if B[buy] > B[i] then
6:             buy ← i
7:             sell ← i
8:         else
9:             if S[sell] < S[i] then
10:                sell ← i
11:            end if
12:        end if
13:    end for
14:
15:    return (buy, sell)
16: end function
```

(3) TODO: Problem Statement

Algorithm 3 TODO

```
function LargestSum(A, n)
    max ← −∞                                   ▷ j represents maximum
    subMax ← −∞                                ▷ i represents sub-maximum
    for k from 1 to n do
        if A[max] ≤ A[k] then
            subMax ← max
            max ← k
        else
            if A[subMax] < A[k] then
                subMax ← k
            end if
        end if
    end for

    return A[max] and A[subMax]
end function
```