OPTIMAL-BST(p, q, n)

```
let e[1..n+1, 0..n], w[1..n+1, 0..n], and root[1..n, 1..n] be new tables
for i = 1 to n + 1
    e[i, i − 1] = 0
    w[i, i − 1] = 0
for l = 1 to n
    for i = 1 to n − l + 1
        j = i + l − 1
        e[i, j] = ∞
        w[i, j] = w[i, j − 1] + p_j
        for r = i to j
            t = e[i, r − 1] + e[r + 1, j] + w[i, j]
            if t < e[i, j]
                e[i, j] = t
                root[i, j] = r
return e and root
```