

1. **Intro.** Testing a formula in exercise 7.5.1–12.

```
#define maxn 32
#define maxm 32
#include <stdio.h>
#include <stdlib.h>
int cha[maxn][maxm][maxn];
⟨Subroutine 2⟩;
main()
{
    register i, j, k;
    for (i = 0; i < maxm; i++)
        for (j = 0; j < maxn; j++) compute(maxn - 1, i, j);
    for (k = 2; k < maxn; k++) {
        printf("Tchoukaillon_array_of_order_%d:\n", k + 1);
        for (i = 0; i < maxm; i++) {
            for (j = 0; j ≤ k; j++) printf("%4d", cha[k][i][j]);
            printf("\n");
        }
    }
}
```

2. ⟨Subroutine 2⟩ ≡

```
int compute(int n, int i, int j)
{
    /* computes  $_{i,j}^{(n+1)}$  */
    register int q, r, v;
    if (n ≡ 0) return i + 1;
    q = i/n, r = i - q * n;
    if (j + r < n) v = compute(n - 1, q * (n + 1) + r, j);
    else v = compute(n - 1, q * (n + 1) + r + 1, j - 1);
    if (i < maxm) cha[n][i][j] = v;
    return v;
}
```

This code is used in section 1.

**3. Index.**

*cha*: [1](#), [2](#).

*compute*: [1](#), [2](#).

*i*: [1](#), [2](#).

*j*: [1](#), [2](#).

*k*: [1](#).

*main*: [1](#).

*maxm*: [1](#), [2](#).

*maxn*: [1](#).

*n*: [2](#).

*printf*: [1](#).

*q*: [2](#).

*r*: [2](#).

*v*: [2](#).

⟨Subroutine 2⟩ Used in section 1.

TCHOUKAILLON-ARRAYS

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