1.

```c
#include <stdio.h>
int main() {
    int i, j, rows;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; ++i) {
        for (j = 1; j <= i; ++j) {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```

2.

```c
#include <stdio.h>
int main() {
    int i, j, rows;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; ++i) {
        for (j = 1; j <= i; ++j) {
            printf("%d ", j);
        }
        printf("\n");
    }
    return 0;
}
```

3.

```c
#include <stdio.h>
int main() {
    int i, j;
    char input, alphabet = 'A';
    printf("Enter an uppercase character you want to print in the last row: ");
    scanf("%c", &input);
    for (i = 1; i <= (input - 'A' + 1); ++i) {
        for (j = 1; j <= i; ++j) {
            printf("%c ", alphabet);
        }
        ++alphabet;
        printf("\n");
    }
    return 0;
}
```

4.

```c
#include <stdio.h>
int main() {
    int i, j, rows;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = rows; i >= 1; --i) {
        for (j = 1; j <= i; ++j) {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```

5.

```c
#include <stdio.h>
int main() {
    int i, j, rows;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = rows; i >= 1; --i) {
        for (j = 1; j <= i; ++j) {
            printf("%d ", j);
        }
        printf("\n");
    }
    return 0;
}
```

6.

```c
#include <stdio.h>
int main() {
    int i, space, rows, k = 0;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; ++i, k = 0) {
        for (space = 1; space <= rows - i; ++space) {
            printf("  ");
        }
        while (k != 2 * i - 1) {
            printf("* ");
            ++k;
        }
        printf("\n");
    }
    return 0;
}
```

7.

```c
#include <stdio.h>
int main() {
    int i, space, rows, k = 0, count = 0, count1 = 0;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; ++i) {
        for (space = 1; space <= rows - i; ++space) {
            printf("  ");
            ++count;
        }
        while (k != 2 * i - 1) {
            if (count <= rows - 1) {
                printf("%d ", i + k);
                ++count;
            } else {
                ++count1;
                printf("%d ", (i + k - 2 * count1));
            }
            ++k;
        }
        count1 = count = k = 0;
        printf("\n");
    }
    return 0;
}
```

8.

```c
#include <stdio.h>
int main() {
    int rows, i, j, space;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = rows; i >= 1; --i) {
        for (space = 0; space < rows - i; ++space)
            printf("  ");
        for (j = i; j <= 2 * i - 1; ++j)
            printf("* ");
        for (j = 0; j < i - 1; ++j)
            printf("* ");
        printf("\n");
    }
    return 0;
}
```

9.

```c
#include <stdio.h>
int main() {
    int rows, coef = 1, space, i, j;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 0; i < rows; i++) {
        for (space = 1; space <= rows - i; space++)
            printf("  ");
        for (j = 0; j <= i; j++) {
            if (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```

10.

```c
#include <stdio.h>
int main() {
    int rows, i, j, number = 1;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; i++) {
        for (j = 1; j <= i; ++j) {
            printf("%d ", number);
            ++number;
        }
        printf("\n");
    }
    return 0;
}
```