

Patterns and Vectors Questions

Hard Pattern Problems (5)

1. Print the following pattern for n=5:

```
1
121
12321
1234321
123454321
```

2. Print a diamond star pattern with odd height n=7:

```
  *
 ***
*****
*****
 ***
  *
```

3. Print Pascal's Triangle up to n=5 rows:

```
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
```

4. Print a hollow pyramid pattern with n=5:

```
  *
 * *
*   *
*     *
*****
```

5. Print a zig-zag star pattern for n=9:

```
  *   *   *
* * * * *
  *   *   *
```

Basic Vector Questions (5)

- 1. Create a vector of integers and insert 5 elements from user input, then print them.
- 2. Insert 10 integers into a vector and print the maximum and minimum values.
- 3. Create two vectors of integers and concatenate them into a third vector.
- 4. Implement a program to reverse a vector without using the inbuilt reverse function.
- 5. Search for a given element in a vector and print its index if found.