

Ques to practice after studying the topics

- Find min/max of 3 numbers
- Form different types of patterns -diamond, triangle, empty square
- Patterns ques (you can do any number of questions from these which you like)-
- Given N, print patterns upto N lines. For eg For N=6 , the following pattern will be printed.

```
1
11
111
1001
11111
100001
```

- Take N (number of rows), print the following pattern (for N = 4).

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

- Take N (number of rows), print the following pattern (for N = 4).

```
1
2 3 2
3 4 5 4 3
4 5 6 7 6 5 4
```

- Take N as input. For a value of N=7, we wish to draw the following pattern :

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

- Take N (number of rows), print the following pattern (for N = 5)

```
1
2 2
3 0 3
4 0 0 4
5 0 0 0 5
```

- Take N as input. For a value of N=5, we wish to draw the following pattern :

```

5           5
5 4       4 5
5 4 3     3 4 5
5 4 3 2   2 3 4 5
5 4 3 2 1 1 2 3 4 5
5 4 3 2 1 0 1 2 3 4 5
5 4 3 2 1 1 2 3 4 5
5 4 3 2   2 3 4 5
5 4 3     3 4 5
5 4       4 5
5           5

```

- Take as input N, an odd number(≥ 5) Print the following pattern for N = 7

```

*   ****
*   *
*   *
*****
   *   *
   *   *
****  *

```

- Take N (number of rows), print the following pattern (for N = 5).

```

* * * * *
* *   * *
*       *
* *   * *
* * * * *

```

- Take n as number of rows, print the following pattern (for n=5)

```

1 2 3 4 5
1 2 3 4 *
1 2 3 * * *
1 2 * * * * *
1 * * * * * * *

```

- Print pascal triangle till n rows. For n=5 given below

```

1
11
121
1331
14641

```

- Ques on finding time complexity

- Checking prime number in \sqrt{n}
- Implement sieve of eratosthenes <https://leetcode.com/problems/count-primes/>
- Find smallest prime factor
- Check if a number is a power of 2 or not in $O(1)$
- Count total set bits
- Divide Integers without / operator
- Power Set (this is very important)
- Find MSB in $O(1)$
- Find the square of a number without using multiplication or division
- Convert Binary to decimal and vice versa
- Finding number of 1 in binary rep
- Count digits of number
- Reverse a number
- Factorial of a number
- Check whether a number is Palindrome
<https://practice.geeksforgeeks.org/problems/palindrome0746/1>
<https://leetcode.com/problems/palindrome-number/>
- Check whether a number is armstrong number
<https://practice.geeksforgeeks.org/problems/armstrong-numbers2727/1>
- Calculate N^p and n^c
- Write code for Fast exponentiation <https://leetcode.com/problems/powx-n/>