

# TCP Week 2

## Mathematics -

Prime Numbers, Sieve of Eratosthenes, GCD, LCM, Factorials, Combinatorics, and Modular Arithmetic.

Basics -

- <https://www.hackerearth.com/practice/math/number-theory/basic-number-theory-1/tutorial/>

Prime Number Tutorial -

- <https://www.geeksforgeeks.org/c-program-to-check-whether-a-number-is-prime-or-not/>

Sieve of Eratosthenes -

- <https://cp-algorithms.com/algebra/sieve-of-eratosthenes.html>
- <https://www.youtube.com/watch?v=eKp56OLhoQs>

Modular Arithmetic Tutorial -

- <https://www.geeksforgeeks.org/modular-arithmetic/>
- [https://www.youtube.com/watch?v=-OPohCQqi\\_E&t=515s](https://www.youtube.com/watch?v=-OPohCQqi_E&t=515s)

GCD, LCM, Factorials Tutorials -

- <https://cp-algorithms.com/algebra/euclid-algorithm.html>
- <https://www.geeksforgeeks.org/program-to-find-lcm-of-two-numbers/>
- <https://www.geeksforgeeks.org/program-for-factorial-of-a-number/>

Combinatorics Tutorial -

- <https://www.hackerearth.com/practice/math/combinatorics/basics-of-combinatorics/tutorial/>

Problems -

1. <https://leetcode.com/problems/count-primes/>

2. <https://www.hackerearth.com/practice/math/number-theory/primality-tests/practice-problems/algorithm/in-love-with-primes/>
3. [https://atcoder.jp/contests/abc149/tasks/abc149\\_c](https://atcoder.jp/contests/abc149/tasks/abc149_c)
4. <https://leetcode.com/problems/number-of-good-pairs/>
5. <https://www.hackerearth.com/practice/math/combinatorics/inclusion-exclusion/practice-problems/algorithm/andrew-and-wengaluru-city/>
6. <https://www.hackerearth.com/practice/math/number-theory/basic-number-theory-1/practice-problems/algorithm/calculate-the-power/>
7. <https://www.codechef.com/problems/FLOW016>
8. <https://leetcode.com/problems/find-greatest-common-divisor-of-array/>
9. <https://www.codechef.com/problems/FCTRL2>
10. <https://leetcode.com/problems/factorial-trailing-zeroes/>