



HackerRank Online Judge

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HackerRank Online Judge - Phase 3

Mathematics



Lecture Agenda

We will discuss in this lecture
the following topics

1- Fundamentals	[5 problems]
2- Number Theory	[35 problems]
3- Combinatorics	[20 problems]
4- Algebra	[25 problems]
5- Geometry	[15 problems]
6- Probability	[15 problems]



Let's
STARTUP

Lecture Agenda



Section 1: Fundamentals

Section 2: Number Theory

Section 3: Combinatorics

Section 4: Algebra

Section 5: Geometry

Section 6: Probability



HackerRank - Fundamentals



- [01] <https://www.hackerrank.com/challenges/summing-the-n-series/problem>
- [02] <https://www.hackerrank.com/challenges/diwali-lights/problem>
- [03] <https://www.hackerrank.com/challenges/special-multiple/problem>
- [04] <https://www.hackerrank.com/challenges/sherlock-and-permutations>
- [05] <https://www.hackerrank.com/challenges/even-odd-query/problem>
- [06] <https://www.hackerrank.com/challenges/matrix-tracing/problem>



Lecture Agenda



✓ Section 1: Fundamentals

Section 2: Number Theory

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HackerRank - Number Theory



- [01] <https://www.hackerrank.com/challenges/littlepandapower/problem>
- [02] <https://www.hackerrank.com/challenges/mehta-and-his-laziness/problem>
- [03] <https://www.hackerrank.com/challenges/minimal-distance-to-pi/problem>
- [04] <https://www.hackerrank.com/challenges/help-mike/problem>
- [05] <https://www.hackerrank.com/challenges/dance-class/problem>
- [06] <https://www.hackerrank.com/challenges/akhil-and-gf/problem>
- [07] <https://www.hackerrank.com/challenges/little-chammys-huge-donation/problem>
- [08] <https://www.hackerrank.com/challenges/manasa-and-factorials/problem>
- [09] <https://www.hackerrank.com/challenges/number-of-subsets/problem>
- [10] <https://www.hackerrank.com/challenges/largest-coprime-submatrix/problem>
- [11] <https://www.hackerrank.com/challenges/divisor-exploration-2/problem>
- [12] <https://www.hackerrank.com/challenges/strange-numbers/problem>
- [13] <https://www.hackerrank.com/challenges/divisor-exploration-3/problem>
- [14] <https://www.hackerrank.com/challenges/sherlock-puzzle/problem>
- [15] <https://www.hackerrank.com/challenges/devu-police/problem>
- [16] <https://www.hackerrank.com/challenges/long-permutation/problem>

HackerRank - Number Theory



- [17] <https://www.hackerrank.com/challenges/divisor-exploration/problem>
- [18] <https://www.hackerrank.com/challenges/scalar-products/problem>
- [19] <https://www.hackerrank.com/challenges/number-of-m-coprime-arrays/problem>
- [20] <https://www.hackerrank.com/challenges/chandrima-and-xor/problem>
- [21] <https://www.hackerrank.com/challenges/flip/problem>
- [22] <https://www.hackerrank.com/challenges/fibonacci-gcd/problem>
- [23] <https://www.hackerrank.com/challenges/a-very-special-multiple/problem>
- [24] <https://www.hackerrank.com/challenges/fibonacci-lcm/problem>
- [25] <https://www.hackerrank.com/challenges/unfriendly-numbers/problem>
- [26] <https://www.hackerrank.com/challenges/gcd-product/problem>
- [27] <https://www.hackerrank.com/challenges/the-bouncing-flying-ball/problem>
- [28] <https://www.hackerrank.com/challenges/period/problem>
- [29] <https://www.hackerrank.com/challenges/order-of-prime-in-factorial/problem>
- [30] <https://www.hackerrank.com/challenges/niceclique/problem>
- [31] <https://www.hackerrank.com/challenges/superpowers/problem>
- [32] <https://www.hackerrank.com/challenges/degree-of-an-algebraic-number/problem>

HackerRank - Number Theory



- [33] <https://www.hackerrank.com/challenges/demidenko-computer-virus/problem>
- [34] <https://www.hackerrank.com/challenges/copprime-power-sum/problem>
- [35] <https://www.hackerrank.com/challenges/gcd-mocktail/problem>
- [36] <https://www.hackerrank.com/challenges/bear-and-cryptography/problem>



Lecture Agenda



✓ Section 1: Fundamentals

✓ Section 2: Number Theory

Section 3: Combinatorics

Section 4: Algebra

Section 5: Geometry

Section 6: Probability



HackerRank - Combinatorics



- [01] <https://www.hackerrank.com/challenges/mehta-and-the-typical-supermarket/problem>
- [02] <https://www.hackerrank.com/challenges/game-of-throne-ii/problem>
- [03] <https://www.hackerrank.com/challenges/permutation-problem/problem>
- [04] <https://www.hackerrank.com/challenges/towers>
- [05] <https://www.hackerrank.com/challenges/tile-painting-revisited>
- [06] <https://www.hackerrank.com/challenges/polita-sets>
- [07] <https://www.hackerrank.com/challenges/alien-flowers>
- [08] <https://www.hackerrank.com/challenges/grid-lines>
- [09] <https://www.hackerrank.com/challenges/highway-construction>
- [10] <https://www.hackerrank.com/challenges/value-of-all-permutations>
- [11] <https://www.hackerrank.com/challenges/irresponsible-numbers>
- [12] <https://www.hackerrank.com/challenges/k-balance>
- [13] <https://www.hackerrank.com/challenges/strongly-connected-digraphs>
- [14] <https://www.hackerrank.com/challenges/r-tree-decoration>
- [15] <https://www.hackerrank.com/challenges/count-palindromes>
- [16] <https://www.hackerrank.com/challenges/introduction-to-representation-theory/problem>

HackerRank - Combinatorics



- [17] <https://www.hackerrank.com/challenges/demidenko-farmer/problem>
- [18] <https://www.hackerrank.com/challenges/surveillance/problem>
- [19] <https://www.hackerrank.com/challenges/to-heap-or-not-to-heap/problem>
- [20] <https://www.hackerrank.com/challenges/sasha-and-swaps/problem>
- [21] <https://www.hackerrank.com/challenges/powercode/problem>
- [22] <https://www.hackerrank.com/challenges/how-many-trees/problem>
- [23] <https://www.hackerrank.com/challenges/byteland-itinerary/problem>



Lecture Agenda



✓ Section 1: Fundamentals

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Section 4: Algebra

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Section 6: Probability



HackerRank - Algebra



- [01] <https://www.hackerrank.com/challenges/easy-sum/problem>
- [02] <https://www.hackerrank.com/challenges/pairwise-sum-and-divide/problem>
- [03] <https://www.hackerrank.com/challenges/sherlock-and-square/problem>
- [04] <https://www.hackerrank.com/challenges/xor-love/problem>
- [05] <https://www.hackerrank.com/challenges/gneck/problem>
- [06] <https://www.hackerrank.com/challenges/emma-and-sum-of-products/problem>
- [07] <https://www.hackerrank.com/challenges/demidenko-black-hole/problem>
- [08] <https://www.hackerrank.com/challenges/power-calculation/problem>
- [09] <https://www.hackerrank.com/challenges/sherlock-and-queries/problem>
- [10] <https://www.hackerrank.com/challenges/summing-the-k-n-series/problem>
- [11] <https://www.hackerrank.com/challenges/circle-summation/problem>
- [12] <https://www.hackerrank.com/challenges/signal-tower/problem>
- [13] <https://www.hackerrank.com/challenges/summing-the-k-n-r-series/problem>
- [14] <https://www.hackerrank.com/challenges/fun-with-series/problem>
- [15] <https://www.hackerrank.com/challenges/introduction-to-algebra-2/problem>
- [16] <https://www.hackerrank.com/challenges/black-box-1/problem>

HackerRank - Algebra



- [17] <https://www.hackerrank.com/challenges/linear-algebra-foundations-7-the-1000th-power-of-a-matrix/problem>
- [18] <https://www.hackerrank.com/challenges/linear-algebra-fundamentals-8-systems-of-equations/problem>
- [19] <https://www.hackerrank.com/challenges/linear-algebra-fundamentals-9-eigenvalues/problem>
- [20] <https://www.hackerrank.com/challenges/determinant-of-the-matrix-2/problem>
- [21] <https://www.hackerrank.com/challenges/eigenvalue-of-matrix-1/problem>
- [22] <https://www.hackerrank.com/challenges/eigenvalue-of-matrix-2/problem>
- [23] <https://www.hackerrank.com/challenges/eigenvalues-of-matrix-3/problem>
- [24] <https://www.hackerrank.com/challenges/eigenvalues-of-matrix-4/problem>



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HackerRank - Geometry



- [01] <https://www.hackerrank.com/challenges/jim-beam/problem>
- [02] <https://www.hackerrank.com/challenges/good-point/problem>
- [03] <https://www.hackerrank.com/challenges/polygons/problem>
- [04] <https://www.hackerrank.com/challenges/polygon/problem>
- [05] <https://www.hackerrank.com/challenges/meeting-point/problem>
- [06] <https://www.hackerrank.com/challenges/house-location/problem>
- [07] <https://www.hackerrank.com/challenges/isosceles-triangles/problem>
- [08] <https://www.hackerrank.com/challenges/sherlock-and-geometry/problem>
- [09] <https://www.hackerrank.com/challenges/n-letter/problem>
- [10] <https://www.hackerrank.com/challenges/best-sum/problem>
- [11] <https://www.hackerrank.com/challenges/geometry-queries/problem>
- [12] <https://www.hackerrank.com/challenges/count-triangles/problem>



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HackerRank - Probability



- [01] <https://www.hackerrank.com/challenges/sherlock-and-probability/problem>
- [02] <https://www.hackerrank.com/challenges/normal-distribution-3/problem>
- [03] <https://www.hackerrank.com/challenges/binomial-distribution-2/problem>
- [04] <https://www.hackerrank.com/challenges/binomial-distribution-3/problem>
- [05] <https://www.hackerrank.com/challenges/connect-the-country/problem>
- [06] <https://www.hackerrank.com/challenges/rirb/problem>
- [07] <https://www.hackerrank.com/challenges/random-number-generator-1/problem>
- [08] <https://www.hackerrank.com/challenges/zombie-march/problem>
- [09] <https://www.hackerrank.com/challenges/bear-and-dancing/problem>
- [10] <https://www.hackerrank.com/challenges/random/problem>
- [11] <https://www.hackerrank.com/challenges/mathematical-expectation/problem>
- [12] <https://www.hackerrank.com/challenges/randomness/problem>



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