From 27th June

Problem -

https://codeforces.com/problemset/problem/1475/B

Idea/ Intuition:

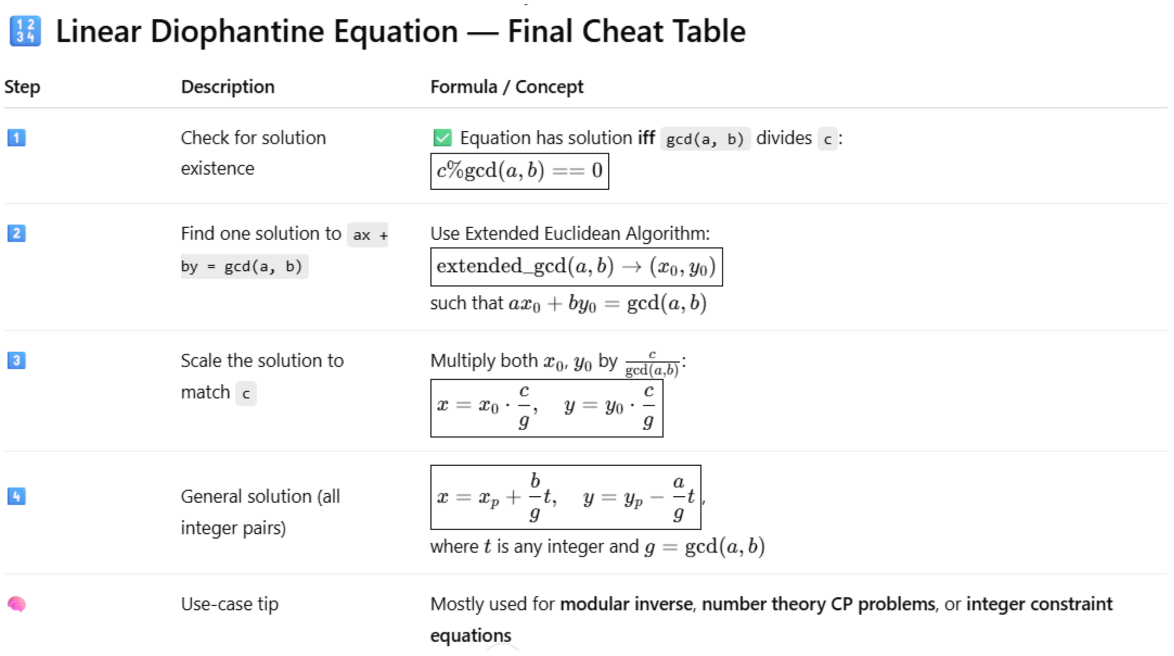
> 2021 has an extra `1` that can be tracked using modulo, `num%2020` , if that shift x to negative then not valid.

Future Wise

> `Integer linear combinations` : double check negatives, and both zeroes.

> Called `Linear Diophantine Equation` : Visit the link Below (Very Very Helpful)

https://cp-algorithms.com/algebra/linear-diophantine-equation.html



🔢 Linear Diophantine Equation — Final Cheat Table

Step	Description	Formula / Concept
1️⃣	Check for solution existence	✅ Equation has solution **iff** `gcd(a, b)` divides `c`: $\boxed{c\%\gcd(a,b) == 0}$
2️⃣	Find one solution to `ax + by = gcd(a, b)`	Use Extended Euclidean Algorithm: $\boxed{\text{extended\_gcd}(a,b) \rightarrow (x_0, y_0)}$ such that $ax_0 + by_0 = \gcd(a,b)$
3️⃣	Scale the solution to match `c`	Multiply both x_0, y_0 by $\frac{c}{\gcd(a,b)}$: $\boxed{x = x_0 \cdot \frac{c}{g}, \quad y = y_0 \cdot \frac{c}{g}}$
4️⃣	General solution (all integer pairs)	$\boxed{x = x_p + \frac{b}{g}t, \quad y = y_p - \frac{a}{g}t}$, where t is any integer and $g = \gcd(a,b)$
🧠	Use-case tip	Mostly used for **modular inverse**, **number theory CP problems**, or **integer constraint equations**

Problem -

https://codeforces.com/contest/1876/problem/A

Idea/ Intuition:

> Pass info to those guys who take less cost to move info forward. If somebody charges more than Leader himself, ask leader to distribute info to further guys.

Future Wise

> Need to minimize cost, so sort by Cost not by sharing capacity. Don't forget to include Leader into transactions.

Problem -

https://codeforces.com/contest/1715/problem/B

Idea/ Intuition:

> Find upper and lower bounds. So need to deal with only valid cases.

Future Wise

> Don’t miss to calculate upper bound coz that is finite.

Problem -

https://codeforces.com/contest/1704/problem/B

Idea/ Intuition:

> Keep track of min and max in the subarray, if u need to stop, increase count.

Caution

> Remember to reset min and max.

Problem -

https://codeforces.com/contest/1614/problem/B

Idea/ Intuition:

> place the builder at zero. Sort the array in descending order, place the house which need maximum visits at the nearest place, like, at +1, then at -1, +2, -2 ... so on.

Caution

> While sorting keep track of indices, no. of visits and their relative positions.

Problem -

https://codeforces.com/contest/1632/problem/B

Idea/ Intuition:

- The XOR of two adjacent values in a permutation is largest when their most significant differing bit is high.
- So we must **avoid placing numbers differing in high bits next to each other**, *as much as possible*.

Future Wise

> Don’t randomly shuffle — the cost will spike due to unintended high-bit transitions. Don't forget `0` must be included, and `n-1` may be a power of two minus one (corner case).
