B. Kana and Dragon Quest game

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Kana was just an ordinary high school girl before a talent scout discovered her. Then, she became an idol. But different from the stereotype, she is also a gameholic.

One day Kana gets interested in a new adventure game called *Dragon Quest*. In this game, her quest is to beat a dragon.

The dragon has a *hit point* of x initially. When its *hit point* goes to 0 or under 0, it will be defeated. In order to defeat the dragon, Kana can cast the two following types of spells.

- `Void Absorption`

Assume that the dragon's current *hit point* is h, after *casting* this spell its *hit point* will become $\lfloor \frac{h}{2} \rfloor + 10$. Here $\lfloor \frac{h}{2} \rfloor$ denotes h divided by two, rounded down.

- `Lightning Strike`

This spell will decrease the dragon's *hit point* by 10. Assume that the dragon's current *hit point* is h, after *casting* this spell its *hit point* will be lowered to $h - 10$.

Due to some reasons Kana can only *cast* **no more than** n `Void Absorptions` and m `Lightning Strikes`. She can cast the spells in any order and **doesn't have to** cast all the spells. Kana isn't good at math, so you are going to help her to find out whether it is possible to defeat the dragon.

Input

The first line contains a single integer t $(1 \leq t \leq 1000)$ — the number of test cases.

The next t lines describe test cases. For each test case the only line contains three integers x, n, m $(1 \leq x \leq 10^5,\ 0 \leq n, m \leq 30)$ — the dragon's intitial *hit point*, the maximum number of `Void Absorptions` and `Lightning Strikes` Kana can *cast* respectively.

Output

If it is possible to defeat the dragon, print "`YES`" (without quotes). Otherwise, print "`NO`" (without quotes).

You can print each letter in any case (upper or lower).

Example

input
7 100 3 4 189 3 4 64 2 3 63 2 3 30 27 7 10 9 1 69117 21 2

output
YES NO NO YES YES YES YES

Note

One possible casting sequence of the first test case is shown below:

- `Void Absorption` $\lfloor \frac{100}{2} \rfloor + 10 = 60$.
- `Lightning Strike` $60 - 10 = 50$.
- `Void Absorption` $\lfloor \frac{50}{2} \rfloor + 10 = 35$.
- `Void Absorption` $\lfloor \frac{35}{2} \rfloor + 10 = 27$.
- `Lightning Strike` $27 - 10 = 17$.

- `Lightning Strike` $17 - 10 = 7$.
- `Lightning Strike` $7 - 10 = -3$.