Game of Darts (G)

Memory limit: 1024 MB Time limit: 1.00 s

Dwarf Twardowski's lovely but rather rowdy night at the local inn was interrupted by Dwarf the Devil, who came to collect Twardowski's soul, as they had agreed a few years prior. Dwarf Twardowski did not give up so easily. Contrary to popular belief, Dwarf the Devil did not have to complete any elaborate challenges to claim his prize — both dwarves simply played darts for Twardowski's soul instead.

It is now the late stage of the game and victory is within Dwarf Twardowski's reach. In at most three throws, he must score *exactly* P points. Otherwise, Dwarf the Devil will surely win on his next turn.

A dartboard consists of a bullseye, surrounded by a small ring, and 20 segments numbered (not in order) from 1 to 20. Each segment is divided into four parts: two large fields, a double ring, and a triple ring. Points are awarded as follows:

- 50 points for the bullseye
- 25 points for the ring around the bullseye
- a points for either of the two large fields in segment a (where $a \in \{1, 2, \ldots, 20\}$)
- $2 \cdot a$ points for the double ring in segment a (where $a \in \{1, 2, \ldots, 20\}$)
- $3 \cdot a$ points for the triple ring in segment a (where $a \in \{1, 2, \ldots, 20\}$)

If the player misses the board, they score 0 points for that throw. Additionally, for Twardowski to win on this turn, his last throw must land **on a double**: either the bullseye or a double ring.

Determine whether Twardowski can win on this turn, and if so, calculate how many points he needs to score on each throw.

Input

The first and only line of input contains a single integer P, the number of points Dwarf Twardowski must score.

Output

If it is possible for Dwarf Twardowski to win, output `YES` followed in the next line by a single integer T ($1 \leq T \leq 3$), the number of throws he needs. The following line should contain T space-separated integers denoting the points scored on each throw. If there are multiple valid answers, you may output any of them. If it is impossible to win on this turn, output `NO`.

Limits

$1 \leq P \leq 180$.

Examples

Input	Output	Explanation

`80`	`YES`
	`3`
	`1 39 40`
		In the first example, Dwarf Twardowski can win by scoring 1 point (large field in segment 1), 39 points (triple ring in segment 13), and 40 points (double ring in segment 20).

Input	Output	Explanation
177	NO	Scoring 60, 60 and 57 is not feasible, while last throw must land on a double.

Input	Output	Explanation
2	YES 1 2	In the third example, Dwarf Twardowski can win in a single throw by hitting the double ring in segment 1.