Problem H. Goldbach's Conjecture

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	64 mebibytes

Let $d(x)$ be the sum of all divisors of x. x is called a good number, if every number from 1 to $d(x)$ can be expressed as a sum of distinct divisors of x.

For example, 6 is a good number, $d(6) = 1 + 2 + 3 + 6 = 12$, $4 = 1 + 3$, $5 = 2 + 3$, $7 = 1 + 6$ and so on.

Teacher Mai wants to know whether a even number p can be expressed as a sum of two good numbers.

Input

First line of the input contains one integer T ($1 \le T \le 4 \cdot 10^4$) — number of test cases.

For each test case, there is only one line contains one even number q ($1 \le q \le 10^{18}$).

Most test cases are generated randomly.

Output

For each test case, print "YES" or "NO" in the first line. That means if is possible to express q as a sum of two good numbers.

If your answer is "YES", print two numbers a and b in the second lines. Both a and b should be good numbers, and $a + b = q$.

In the third and the fourth line, print the factorization of number a and b. If $a = \prod_{i=1}^{k} p_i^{e_i}$, where $p_1 < p_2 < \ldots < p_k$, p_i are all prime numbers and $e_i \ge 1$, you should print k first, then $2k$ space-seperated numbers $p_1, e_1, p_2, e_2, \ldots, p_k, e_k$.

Example

standard input	standard output
1 18	YES 6 12 2 2 1 3 1 2 2 2 3 1