Problem A. AMM MMM (New Year)

Time limit 1000 ms

Code length Limit 50000 B

OS Linux

Currently, it is X:00 hours on December $31^{\it st}$ and you are wondering how many hours are left till midnight.

For the purposes of this problem, we use a 24 hour system. So, X can range from 0 to 23, and you need to tell the number of hours left till 00:00 of the next day.

Input Format

• The first and only line of input contains a single integer *X* .

Output Format

For each test case, output on a new line the number of hours left till midnight

Constraints

• $0 \le X \le 23$

Sample 1

Input	Output
0	24

Right now, its 00:00 or 12 AM on 31^{st} December. That means a whole day, i.e. 24 hours is left till the new year.

Sample 2

Input	Output
23	1

It is 23:00 or 11 PM. Only 1 hour is left!

Problem B. AND Trigon)

Time limit 1000 ms

Code length Limit 50000 B

OS Linux

You are given 3 sticks of length A, B and C.

Please check if they can be the side lengths of a valid non-degenerate triangle.

Recall that A,B and C can be the side-lengths of a non-degenerate triangle if and only if each of the following 3 conditions hold:

- A+B>C
- B+C>A
- A+C>B

Input Format

• The first and only line of input contains 3 integers – A, B and C.

Output Format

For each test case, output on a new line Yes if the side lengths form a valid triangle, and else No.

It is allowed to print each character in either case. For example, YES, yes and yEs will all be accepted as positive responses.

Constraints

• $1 \le A, B, C \le 10$

Input	Output
2 3 4	Yes

All the conditions are satisfied and so it is a valid triangle.

Sample 2

Input	Output
4 6 2	No

The condition A+C>B is not true here, hence it is not valid.

Input	Output
9 9 9	Yes

Problem C. AND AND TIMEPiece)

Time limit 1000 ms

Code length Limit 50000 B

OS Linux

Chef is currently in the year X in Chefland. He has a time machine that allows him to travel at most 25 years into the future, but he can use it only once.

Determine whether Chef can reach the year 2050 with a single use of the time machine.

Input Format

A single integer X, representing current year in Chefland.

Output Format

Print YES if Chef can reach the year 2050, otherwise print NO.

You may print each character of the string in uppercase or lowercase (for example, the strings YES, yEs, yes, and yeS will all be treated as identical).

Constraints

• $2000 \le X \le 2050$

Sample 1

Input	Output
2050	Yes

Chef is already in the year 2050, so there's no need to use the time machine.

Input	Output
2000	No

Chef can use the time machine to travel up to 25 years into the future, but that won't take him beyond the year 2025.

Sample 3

	Input	Output
2030		Yes

By using the time machine, Chef can travel 20 years into the future, reaching the year 2050.

Sample 4

Input	Output
2025	Yes

By using the time machine, Chef can travel 25 years into the future, reaching the year 2050.

Problem D. MINING MINING (Tennis champion)

Time limit 1000 ms

Code length Limit 50000 B

OS Linux

Chef is a professional tennis player, and his aim is to win more Grand Slams than anyone ever has!

Currently, Chef has won *X* Grand Slams in total.

Chef needs to win at least 25 Grand Slams in total to break the record for most total wins.

Every year, there are exactly 4 Grand Slams. Assuming Chef is skilled enough to always win a Grand Slam, what's the minimum number of years Chef needs to break the record?

Input Format

• The first and only line of input will contain a single integer *X*, Chef's current number of Slams.

Output Format

For each test case, output on a new line the minimum number of years Chef needs to break the record for most Grand Slam wins.

Constraints

•
$$0 \le X \le 24$$

Sample 1

Input	Output
0	7

Chef currently has X=0 wins. Every year, he can get 4 wins. So, after 7 years, he can have upto $4\times 7=28$ wins which is more than the 25 he needs. 6 years is not enough since only 24 wins are attainable, so the answer is 7.

Sample 2

Input	Output
9	4

Chef currently has X=9 wins. Four more years, each with 4 wins, will give him another $4\times 4=16$ wins. That makes a total of 9+16=25 wins, which is enough.

Problem E. NINK NINK NINK (Forbidden chess game)

Time limit 1000 ms

Code length Limit 50000 B

OS Linux

You are playing many chess matches against Magnus. Every match is either a win or loss.

Unsurprisingly, you are currently losing. The current score is A:B, where A is the number of matches you have won, and B is the number of matches Magnus has won.

You want to beat Magnus, i.e. win more matches than Magnus at the end. What is the minimum number of matches you still need to play to have any chance of being able to beat him?

Input Format

• The only line contains 2 integers - A and B, the current score.

Output Format

For each test case, output the number of matches you still need to play.

Constraints

•
$$0 \le A < B \le 5$$

Sample 1

	Input	Output
0 1		2

If you play 2 more matches, it is possible that you win both and end up with a score of 2:1, and beat Magnus.

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Input	Output
2 4	3