

Goals

You will be given M values. Each value is an integer N . You must print the next highest odd number unless N is already odd then print N

Input

Line 1: An integer M for the number of integer values that follow.

Next M Lines: M number of integer values.

Output

M Lines: M integers that if integer N at line M of input is odd then print N otherwise print the next highest odd integer.

Constraint

$$1 \leq M \leq 100$$

$$-10000 \leq N \leq 10000$$

Example

Input

10

-64

71

-98

-60

-18

41

88

-2

-24

63

Output

-63

71

-97

-59

-17

41

89

-1

-23

63