

Calculator

Mohamed is always using his laptop calculator. But his laptop calculator crashed and not working now. So he needs your help to develop a new calculator that has the following features:

- Add: add 2 numbers.
- Multiply: multiply 2 numbers.
- Subtract: subtract 2 numbers.
- Division: divide 2 numbers, but print "Error" if the second number is zero.
- AND: and 2 numbers (guarantee that 2 numbers will be 1 or zero.)
- XOR: XOR 2 numbers (guarantee that 2 numbers will be 1 or zero.)
- OR: OR 2 numbers (guarantee that 2 numbers will be 1 or zero.)
- Mod: remainder of $n1/n2$

Input

input will contain several lines.

First line contain N where N is number of instructions, $1 \leq N \leq 100$.

next N line contain each instruction that will be in form of:

$n1 (+, -, *, /, |, \&, ^, \%)$ $n2$ where $-1000 \leq n1, n2 \leq 1000$ and operators (+, -, *, /, |, &, ^, %) for (add, subtract, multiply, divide, OR, AND, XOR, mod.)

Output

print N lines contain result of each instruction. Print endl after each line you print.

Example

Input:

```
3
1 + 2
2 / 0
0 & 1
```

Output:

```
3
Error
0
```