

Problem2

Two boxes contain the same total numbers of balls having some blacks and some whites in each. From each box "n" number of balls are drawn with replacement. Find the number of white balls in box A if composition of box B is given and such that probability that all white balls are drawn from box A is equal to the probability that the drawing from box B is either all whites or all blacks for the given number of drawings.

Input

T: no of testcases

Next T lines contain 3 integers n,x,y.

Output

For each testcase print in new line "impossible" if it is not possible to find no of white balls in box A else print no of white balls.

Example

Input:

1
2 3 4

Output:

5

Constraints:

$1 \leq n \leq 1000$

$1 \leq x, y \leq 1000$

x=no of white balls in box B , y=no of black balls in box B