

Do your answers on the answer sheets provided. When you write code, you do not need to have "include" or "using" statements.

Question 5

Your job is to write the procedure **int RB(int r, int b, vector <int> &N)**. The procedure works as follows. Each element of N is a number of balls, which are either all red or all blue. The problem is, you don't know which color they are. Your program should return 1 if it is possible for the vector to represent exactly r red balls and b blue balls. It should return 0 if it is impossible.

For example, **RB(6, 7, { 4, 2, 4, 3 })** should return 1, and **RB(6, 8, { 4, 2, 4, 3 })** should return 0. **RB(6, 7, { 4, 4, 4, 1 })** should return 0 as well.

Constraint #1: N will have a maximum of 20 elements.

Constraint #2: Each element of N will be less than 200,000,000.

Constraint #3: No constraints on r or b .

Before writing this procedure, I want you to do the following:

- Outline your solution in English, rather than writing code.
 - If this were a topcoder problem, N 's size could not be much bigger than this. Maybe 21 or 22. Why?
 - Finally, code up your solution.
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Scratch Space is Below (You may find the following useful):

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