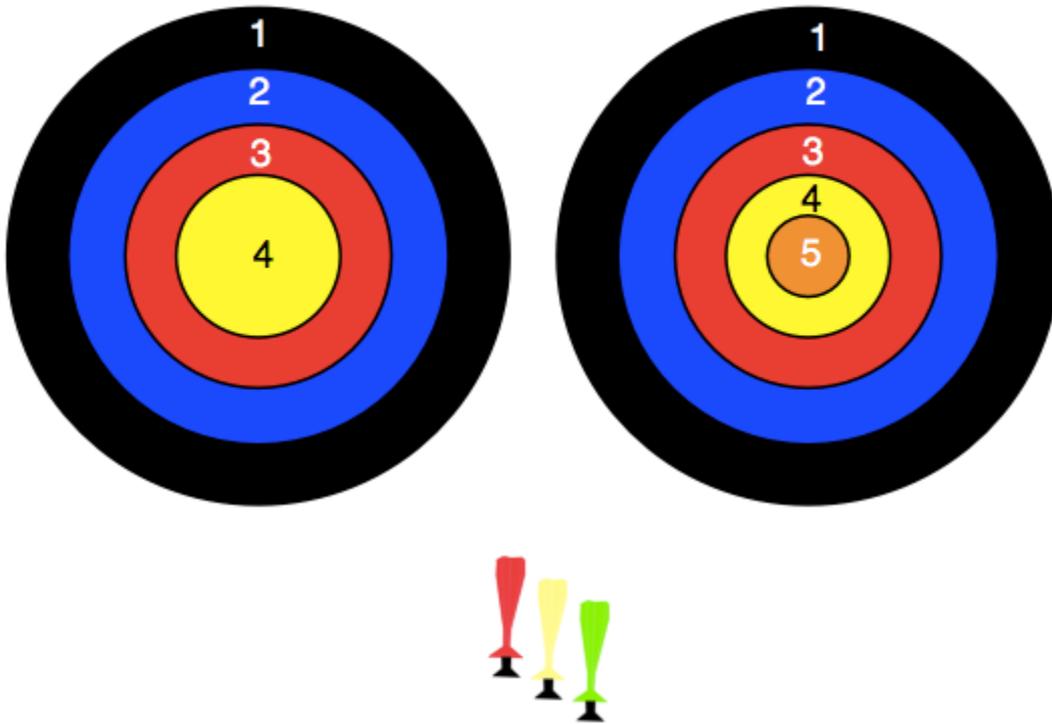




We have two different targets and a set of three darts.



You use three darts for each game. All the darts always hit the target.

An important rule:-

You can only have one dart in the same coloured area on any one target, but you could, for example, have a dart in red 3 on the left target and another dart in red 3 on the right target.

CHALLENGE 1

Each time you have a game, you add up the score of the three darts. Your challenge is to have four games each with the same total score, but made in different ways.

However, note that 1 and 2 on the left target and 3 on the right target is the same as 1 on the left target and 2 and 3 on the right target, so is counted as just one solution.

CHALLENGE 2

Have three games. The three totals must give three consecutive numbers.



In the nine darts used no number must occur more than twice.

So, when Raj chooses:

Game 1: $2 + 3 + 4 = 9$

Game 2: $1 + 4 + 5 = 10$

Game 3: $1 + 5 + 5 = 11$

This is NOT allowed as three 5s have been used and the maximum is two.

CHALLENGE 3

You now move on to having three targets with four darts for each game. As before you can only have one dart in any coloured sector of a target.

The targets are:

1, 2, 3

1, 2, 3, 4

1, 2, 3, 4, 5.

Firstly see how many different totals you can make.

Finally find all the ways of getting the set of three consecutive 11, 12, 13

But in a set of three answers you must not use the same number more than three times.

So, when Sara chooses:

Game 1 $1 + 2 + 3 + 5 = 11$

Game 2 $1 + 2 + 4 + 5 = 12$

Game 3 $2 + 2 + 4 + 5 = 13$

This is not allowed as four 2s have been used and the maximum is three.

Find as many answers as you can.