Games & Strategies

Stanford Math Tournament 2024

Rules

We will play 4 games today!

For each question, you will need to submit a number, a sequence of numbers separated by blank spaces, or a sequence of letters separated by blank spaces.

Discussion is allowed (and even encouraged)!

Winners of each game will receive a small prize!

Poll Everywhere: PollEv.com/hongyueli658

Warmup: Guess 2/3 of the average!

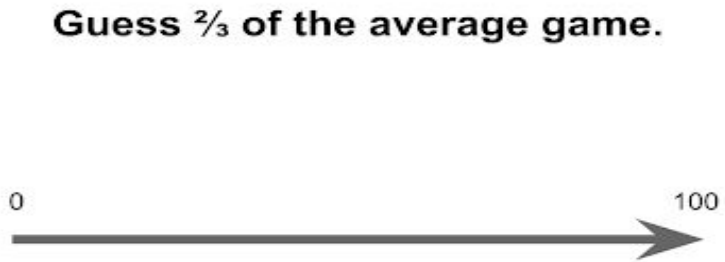
02:00

Players simultaneously select a real number between 0 and 100, inclusive. The winner of the game is the player(s) who select a number closest to ⅔ of the average of numbers chosen by all players.

You have 2 minutes to decide.

You can only enter digits & decimal points, e.g. 66.6666

Commas, fractions are not valid inputs.



Traveler's Dilemma

05:00

N travelers who took the same airline all lost their suitcases. An airline manager tasked to settle the claims asks each traveler i (i = 0,...,N-1) to write down a number x_i the dollar value of the suitcase, no less than 0 and no larger than N+1.

Let $x_{(i)}$ denote the ith smallest value given by the travelers. The manager reimburses the traveler who wrote down the ith smallest number ($x_{(i)}$ - i) dollars, here -i is the penalty for being ‘dishonest’. Ties will be split evenly.

Which real number should you write down? You have 5 minutes to decide.

You can only enter digits (0-9) and decimal points, e.g. 4.62

Attack, Boost, & Cover!

07:00

In a game, there are up to 10 rounds, in each round, you can choose one of the following three actions:

Attack(A): Attack using all the power you currently have. Initially you have 1 power.

If you have zero power, the attack has no effect.

Boost(B): Each boost gives you 1 power.

Cover(C): Can cover any attack with less than or equal to 2 power.

In each round, if you boost while get attacked or the attack has more than 2 power and you cover, you lose this game.

If two players attack simultaneously the person with higher attack power wins. Otherwise continue.

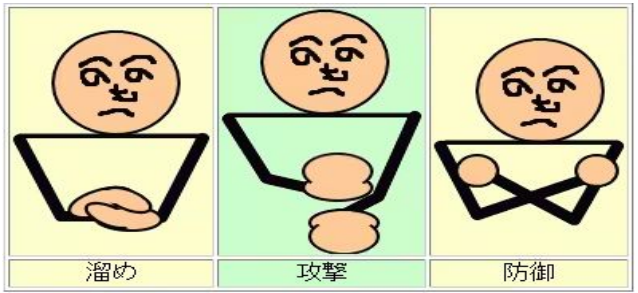
You will play one game against all other players. Your score is the sum of the points gained against all other players.

For a game, Win = 1 point, Draw = 0.5 point, Lose = 0 point.

Submit a length 10 sequence of ‘a’, ‘b’, ‘c’ separated by blank spaces.

Example submission: b b b a c c c b b b a

You have 7 minutes to decide your strategy.



Colonel Blotto

07:00

Each colonel has 100 soldiers and have to distribute them to 10 battlefields with the ith (i = 1, 2, ..., 10) battlefield worth i * 10 points. The colonel with the most soldiers in a field gets all the points on that field. Ties will be split evenly.

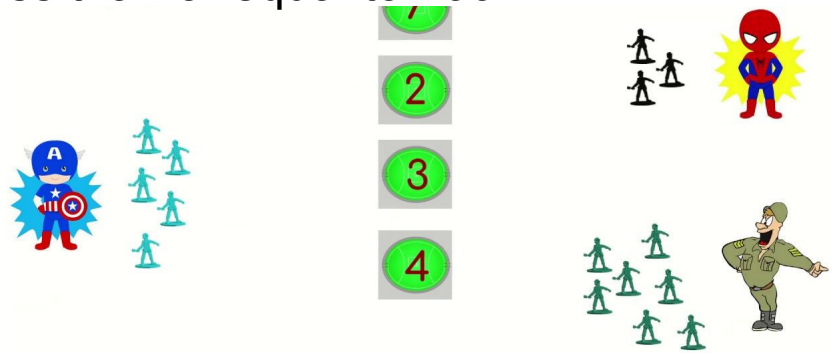
Each unused soldier worths 0.2 point.

What is your strategy?

Submit 10 non-negative integers that sum up to less than or equal to 100 separated by blank spaces:

example submission: 10 10 10 10 10 10 0 10 11 9

You have 7 minutes to deploy your soldiers.



Hope you enjoyed the games!

Any feedback? Send to lhy@stanford.edu !