**Problem :** [**https://codingcompetitions.withgoogle.com/kickstart/round/000000000043585c/000000000085a709#problem**](https://codingcompetitions.withgoogle.com/kickstart/round/000000000043585c/000000000085a709#problem)

**Approach 1 :**

1. **By standard definition of expectation.**

Generate all permutations . Play all games and find the expected scores, then take average.

1. using dp : see 2nd approach in below link :

[**https://codingcompetitions.withgoogle.com/kickstart/round/000000000043585c/000000000085a709#analysis**](https://codingcompetitions.withgoogle.com/kickstart/round/000000000043585c/000000000085a709#analysis)

**Approach 2 :**

Linearity of expression : calculate what is the probability of an individual card to be selected and then sum all these probabilities .

**CODE :** [**https://ideone.com/G91o9A**](https://ideone.com/G91o9A)

**For linearity of expectation :** [**https://ideone.com/kZPfWA**](https://ideone.com/kZPfWA)

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