

Subject n°20

Please don't write on the exam paper.

In a game, players roll four coins of 2€ down an inclined groove onto a horizontal table on which is drawn a set of parallel lines.

If the coin stops between the lines it is a 'winner' but if it stops across or touches a line, then it is a 'loser'.

If all four coins are 'winners', then the player receives a prize of 50€.

If three are 'winners' then he receives a refund for his 8€. The discrete random variable 'number of winning coins' has the following probability function:

Number of winning coins	0	1	2	3	4
Probability	0.4822	0.3858	0.1158	0.0154	0.0008

1. What is the average income a player can win?
What is the average income the organiser can win?
2. Three friends play the game.
 - a) What is the probability that the three of them receive 50€ each?
 - b) What is the probability that at least one of them gets 50€?

Vocabulary:

groove = rainure

