BACCALAURÉAT-Session 2017

Epreuve de Discipline Non Linguistique

Mathématiques/Anglais

Topic: probabilities

Coin tossing

Tossing a coin is the fastest and surest way of deciding between two choices. This can affect the outcome of some major events, especially in sport. Although players train for years to be stars at football, cricket and the hopping marathon, before the starting whistle is blown, a coin gets tossed. Even the best players in the world have to stand by and watch helplessly as the little coin decides which end the teams play at, who bats first or which leg is to be used for the 26-mile hopathon.

The reason a coin is used is that it is very simple and very fair. It's simple because there are only two possible results – heads or tails. More importantly, it's fair because the coin doesn't care which side it lands on, and what's really hard to understand is that *the coin has no memory*. What a funny thing to say, eh? We'll see why many people think that coins do have memories later on, but first let's check on what happens when you toss a coin.

From "Do you feel lucky?" Kjartan Poskitt

Questions

1. Make a short presentation of the text.
2. A fair coin has landed seven times in a row on tails. What is the probability of getting tails on the next toss?
3. Peter is tossing a coin that is five times as likely to land on heads as it is on tails.
   a) What is the chance that it lands on heads?
   b) What is the chance of its landing on tails for the first time on the third toss?
   c) What is the chance that in 10 consecutive tosses, it lands on heads exactly seven times?
4. Give examples of situations in which probabilities are useful.