



Problem of the Week

Problem A

Flipping for Fun

James decides to do an experiment. He flips a coin to determine how he moves. If the coin shows heads, then he moves one step to the right. If the coin shows tails, then he takes one step to the left. Assuming that the coin he is using is fair, (in other words it has an equal chance of landing on heads or tails), answer the following questions:

- A) What is the probability that James will be back where he started after flipping the coin twice?
- B) What is the probability that James will be within one step of where he started after flipping the coin three times?
- C) What is the probability that James will be back where he started after flipping the coin four times?
- D) What is the probability that James will be back where he started after flipping the coin five times?

