

An extra probability problem

1. Suppose that a box contains four coins, for each of which there is a different probability that a Heads will be obtained when the coin is tossed. Let p_i denote the probability of a Heads when the i -th coin is tossed ($i = 1, 2, 3, 4$), and suppose that

$$p_1 = \frac{1}{4}, \quad p_2 = \frac{1}{2}, \quad p_3 = \frac{3}{4}, \quad p_4 = 1.$$

Suppose that one coin is randomly selected from the box and when this coin is tossed once, a Heads is obtained. What is the probability that the i -th coin was selected?