$p_1 = 0.9$

$$p_2 = 0.1$$

$$p_3 = 0.3$$

Revisiting the game

Probability of head

Suppose for every heads you get ₹10

We want to maximize the reward over 100 tosses


भारत
INDIA
सत्यमेव जयते
2011


दस रुपये
₹
10
TEN RUPEES
2010


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₹
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TEN RUPEES
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दस रुपये
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2011


एक रुपया
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RUPEE
1996


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एक रुपया
10
नये पैसे
1957


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Revisiting the game

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Problem Statement

- X_t = Reward at round t

- **Objective: Maximize Expected total no. of heads:**

$$\mathbb{E}[X_1 + X_2 + \cdots + X_{100}]$$

- **Maximum attainable reward in expectation = Rs** 100×9

- **Maximizing expected total reward is equivalent to Minimizing the regret**

$$100 \times 9 - \mathbb{E}[X_1 + X_2 + \cdots + X_{100}]$$