Solution to 10.13.2.12

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Question: Sushma tosses a coin three times and gets tail each time. Do you think the outcome to the next toss will be tail? Give reason.

Solution: Let

$$X = \begin{cases} 1, & \text{If outcome is tail} \\ 0, & \text{If outcome is head} \end{cases} \quad (1)$$

The outcome of each individual toss is independent of the previous tosses. Then,

$$p_X(1) = p_X(0) = \frac{1}{2} \quad (2)$$

So, based on the probability theorm ,the outcome of next toss is equally likely to be head or tails.