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Probability Assignment

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I. PROBLEM3

A. *Question*

Let X represent the difference between the number of heads and the number of tails obtained when a coin is tossed 6 times. What are possible values of X ?

B. *Solution*

A coin is tossed 6 times and X represents the difference between the number of heads and the number of tails.

$$X(6H,0T) = |6 - 0| = 6$$

$$X(5H,1T) = |5 - 1| = 4$$

$$X(4H,2T) = |4 - 2| = 2$$

$$X(3H,3T) = |3 - 3| = 0$$

$$X(2H,4T) = |2 - 4| = 2$$

$$X(1H,5T) = |1 - 5| = 4$$

$$X(0H,6T) = |0 - 6| = 6$$

Thus, the possible values of X are 0,2,4 and 6.