1.4.40 3-sum for random values. Formulate and validate a hypothesis describing the number of triples of N random int values that sum to 0. If you are skilled in mathematical analysis, develop an appropriate mathematical model for this problem, where the values are uniformly distributed between –M and M, where M is not small.

Let X be the random variable = {random value from [-M, M]}

Then P(X = K) = where –M <= K <= M

Let Y be the random variable = {sum of 2 random values from [-M, M]};

Then P(Y = X1 + X2= K) = where -2M <= K <= M

Let Z be the random variable = {sum of 3 random values from [-M, M]}’

Then P (Z = X1+ X2 + X3 = 0) = (only when X1 + X2 [-M, M] the sum has the possibility at () to be 0.)

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Then for an array with n elements, the expectation of number of triple to be zero is…

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