DATA 468 Homework 2

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**Instructions**: Please write or type your solutions clearly and show all relevant steps. Once you are done, please upload your solutions to Gradescope. Ifyou need to scan your solutions, please use a free scanning app like CamScanner instead of sending photographs. Please submit your solutions within the prescribed time, as late submissions will be not considered.

Let {X(t),t∈[0,∞)} be defined as X(t)=A+Bt, for all t∈[0,∞), where A and B

are independent normal N(2,2) random variables.

1. Find all possible sample functions for this random process.
2. Write down the normal distribution of Z and Y
3. Define the random variable Z=X(2), Find the PDF of Y
4. Let also Y=X(3), Find E[YZ]

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