

MTL 106: Probability and Stochastic Processes

Full Marks: 22

Show that if $n \rightarrow \infty$ the MGF of standardized X asymptotically converges to the MGF of $N(0,1)$.

$$[3 + 3 + 1 + 4 = 11]$$

b) Let $X \sim B_1(m, n)$ and $Y \sim \Gamma(\lambda, m+n)$ be independent. Find the distribution of XY , where $\lambda, m, n > 0$.

[2 + 2 + 2 + 5 = 11]

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