
You may discuss the problems and solutions with anyone but the work written up and submitted must be done on your own. Justify every step. Give credit where it is due.

1. Assume X has a Poisson distribution with parameter λ . Calculate the expected value and variance of X .
2. If X is a continuous with distribution function F_X and density function f_X , find the density function of $Y = 2X$.
3. Let X be an exponential random variable with parameter λ , calculate (a) $E(X)$ and (b) Variance of X .
The density function of an exponential random variable is $f(x) = \lambda e^{-\lambda x}$ for $x \geq 0$ and $f(x) = 0$ for $x < 0$.