

KFUPM
Mathematics & Statistics

Term 162
AS 483

Date: 21/2/2017
Duration: 20 minutes

Quiz# 1

Name:

ID #:

Section:

Q1: The loss random variable X has an exponential distribution with mean $\frac{1}{\lambda}$ and an ordinary deductible is applied to all losses. The variance of the cost per payment random variable (excess loss random variable) is 25,600. The variance of the cost per loss random variable is 20,480. Find the amount of the deductible d ?

Q2: Let X be uniform on the interval $[0, 100]$: Find $e_x(d)$ for $d > 0$

Q3: Let X be a Pareto distribution with parameters $\alpha = 4$ and $\theta = 340$: Let Y be a Pareto distribution with parameters $\alpha = 6$ and $\theta = 340$: Which of these has a heavier right tail relative to the other?

Q4: A group insurance policy covers the medical claims of the employees of a small company. The value, V ; of the claims made in one year is described

By

$$V = 100000Y$$

where Y is a random variable with density function

$$f(x) = \begin{cases} k(1 - y)^4 & 0 < y < 1 \\ 0 & \text{Otherwise} \end{cases}$$

where k is a constant.

What is the conditional probability that V exceeds 40,000, given that V exceeds 10,000?