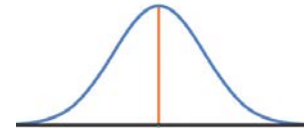


Homework#4

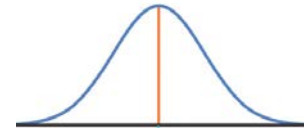


1. The probability distribution of X , the number of imperfections per 10 meters of a synthetic fabric in continuous rolls of uniform width, is given as below

x	0	1	2	3	4
$f(x)$	0.41	0.37	0.16	0.05	0.01

Find the average number of imperfections per 10 meters of this fabric.

Homework#4

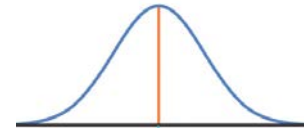


2. For a laboratory assignment, if the equipment is working, the density function of the observed outcome X is

$$f(x) = \begin{cases} 2(1 - x), & 0 < x < 1, \\ 0, & \text{otherwise.} \end{cases}$$

Find the expected value and the variance of X .

Homework#4



3. Let X be a random variable with the following probability distribution:

x	-3	6	9
$f(x)$	$1/6$	$1/2$	$1/3$

Find $\mu_{g(X)}$ and $\sigma^2_{g(X)}$, where $g(X) = (2X + 1)$