

MA 519: Homework 8

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PROBLEM 8.1 (HANDOUT 12, # 2)

Let X be Uniform $[a, b]$. Find the PDF, CDF, mean, and variance of X .

SOLUTION. ■

PROBLEM 8.2 (HANDOUT 12, # 8)

The diameter of a circular disk cut out by a machine has the following PDF

$$f(x) = \begin{cases} \frac{4x-x^2}{9} & \text{if } 1 \leq x \leq 4, \\ 0 & \text{otherwise.} \end{cases}$$

Find the average diameter of disks coming from this machine (in inches).

SOLUTION.

■

PROBLEM 8.3 (HANDOUT 12, # 9)

Suppose X is Uniform $[0, 2]$. Find $P(-0.5 \sin X \leq 0.5)$.

SOLUTION. ■

PROBLEM 8.4 (HANDOUT 12, # 13)

X has a piecewise uniform distribution on $[0, 1]$, $[1, 3]$, $[3, 6]$, and $[6, 10]$. Write its density function.

SOLUTION. ■

PROBLEM 8.5 (HANDOUT 12, # 16)

Problem 1.47, Text.

SOLUTION. ■

PROBLEM 8.6 (HANDOUT 12, # 17)

Problem 1.48, Text.

SOLUTION.

■

PROBLEM 8.7 (HANDOUT 12, # 18)

Problem 1.49, Text.

SOLUTION. ■

PROBLEM 8.8 (HANDOUT 12, # 19)

Problem 1.50, Text.

SOLUTION. ■

PROBLEM 8.9 (HANDOUT 12, # 20)

Problem 1.51, Text.

SOLUTION.

■

PROBLEM 8.10 (HANDOUT 12, # 21)

Problem 1.52, Text.

SOLUTION.

■

PROBLEM 8.11 (HANDOUT 12, # 22)

Problem 1.55, Text.

SOLUTION.

■

PROBLEM 8.12 (HANDOUT 12, # 23)

Problem 1.62, Text.

SOLUTION.

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