

Math 5411 – Mathematical Statistics I– Fall 2024  
w/Nezamoddini-Kachouie

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Homework #6 – September 30, 2024

1. Derive the CDF for  $X \sim \text{Uniform}(a=\min, b=\max)$ . Start with the PDF of  $X$  and use the definition of CDF. It means find the  $P(X \leq x) = F(X=x)$  for  $x \leq a$ ,  $a \leq x \leq b$ , and  $x \geq b$ .
2. Show  $P(x_1 \leq x \leq x_2) = F(x_2) - F(x_1)$
3. Find CDF for  $X \sim \text{Normal}(\mu, \sigma)$ .