

MTH 3210 Lab 2 **Answer Sheet**

Due Thu., Mar. 21

1 Part A

1.1 The Binomial Distribution

1. Give the value of $P(X = 7)$
2. Give the value of $P(3 \leq X \leq 7)$
3. Give the value of $P(X \leq 7)$
4. Give the value of $P(3 \leq X \leq 7)$

1.2 The Geometric Distribution

1. Give the value of $P(X = 5)$
2. Give the value of $P(X \leq 5)$
3. Give the value of $P(3 \leq X \leq 5)$

2 Part B

2.1 The Uniform Distribution

1. Give the value of $P(X \leq 5.5)$
2. Give the value of $P(4.5 \leq X \leq 5.5)$

3. Print the histogram (or save it to be printed later), and answer the following question.

How does the histogram compare to the $\text{uniform}(0, 10)$ pdf?

4. Give the theoretical mean and standard deviation of the $\text{uniform}(0, 10)$ distribution:

Mean $E(X) = \text{-----}$

Standard Deviation $SD(X) = \text{-----}$

Now give the mean and standard deviation of your 10,000 simulated $\text{uniform}(0, 10)$ values

Mean $\bar{X} = \text{-----}$

Standard Deviation $S = \text{-----}$