Math 252: Fall 2023

Name:

Quiz 2

Section: A (1:30) B (2:45)

Show your work.

Exercise 1 $P(A) = 0.2, P(B) = 0.3,$ and $P(A \cap B) = 0.06.$

a) Calculate $P(A \cup B)$

b) Calculate $P(A \mid B)$

c) Calculate $P(B \mid A)$

d) Are A and B mutually exclusive? How do you know?

e) Are A and B independent? How do you know?

Exercise 2 If you flip a coin 8 times,

a) What is the probability of getting exactly 1 head?

b) What is the probability of getting exactly 2 heads?

Exercise 3 Below is the probability table for a random variable X.

Value of X	0	1	2	3
Probability	0.2	0.1	0.3	0.4

a. Calculate $P(X > 1)$

b. Calculate $E(X)$

Exercise 4 A bag contains 3 gold marbles, 5 maroon marbles, and 2 black marbles. You reach into the bag and select 2 of the marbles without replacement.

Construct a probability table for G, the number of gold marbles you get.