

QUIZ 8

Instructions: Put your name in the blanks above. Put your final answers to each question in the designated spaces on these pages. Show all your work!

- (1) 3 points A fair coin is tossed 3 times.
- (a) List the elements of the sample space S for this experiment.

 - (b) List the elements of the event $E = \{\text{at least two heads come up}\}$.

 - (c) Compute $P(E)$.
- (2) 3 points Two fair dice are rolled.
- (a) What is the probability that the numbers are different on the two dice?

 - (b) What is the probability that the sum of the numbers rolled is 8?

 - (c) What is the probability that the sum of the numbers rolled is 5 or higher?
- (3) 4 points A group of 4 people is selected at random. What is the probability that two or more of them will have their birthdays occurring the same month? (For simplicity, assume all months have the same number of days.)

- (4) 4 points Let E and F be events such that: $P(E) = 0.6$, $P(F) = 0.3$, $P(E \cap F) = 0.2$.
- (a) Draw a Venn diagram with this information.
- (b) Compute $P(E \cup F)$.
- (c) Compute $P(E \cup F')$.
- (d) Compute $P(E' \cap F)$.
- (5) 6 points The board of directors of a corporation is made up of 8 men and 6 women. Five of these members will go as a delegation to a national convention.
- (a) How many delegations are possible?
- (b) How many of these delegations contain 3 men and 2 women?
- (c) What is the probability that a delegation contains 3 men and 2 women?
- (d) What is the probability that a delegation contains at least 1 woman?