

HW1

February 21, 2025

Exercise1 (40 points) Two six-sided dice are thrown sequentially, and the face values that come up are recorded.

- a. List the sample space.
- b. List the elements that make up the following events: (1) A = the sum of the two values is at least 5, (2) B = the value of the first die is higher than the value of the second, (3) C = the first value is 4.
- c. List the elements of the following events: (1) $A \cap C$, (2) $B \cup C$, (3) $A \cap (B \cup C)$.

Exercise2 (10 points) Let A and B be arbitrary events. Let C be the event that either A occurs or B occurs, but not both. Express C in terms of A and B using any of the basic operations of union, intersection, and complement.