

Roll two dice. Let A = the first die is even, B = the second die is odd.

Write the following events both as sets (i.e. list the elements) and in plain English:

Here is an example for B^c :

In English B^c The second die is even.

As a list

$$B^c = \{(1, 2), (2, 2), (3, 2), (4, 2), (5, 2), (6, 2), (1, 4), (2, 4), (3, 4), (4, 4), (5, 4), (6, 4), (1, 6), (2, 6), (3, 6), (4, 6), (5, 6), (6, 6)\}$$

1. A^c

6. $(A \cup B)^c$

2. $A \cap B$

7. $A^c \cap B^c$

3. $A \cup B$

8. $(A \cap B^c)^c$

4. $A \cap B$

9. Display each of the above sets as a Venn Diagram

5. $A^c \cup B$

10. Calculate the probability of each of the above sets using the usual sample space and the uniform distribution.