

Functions Worksheet 6

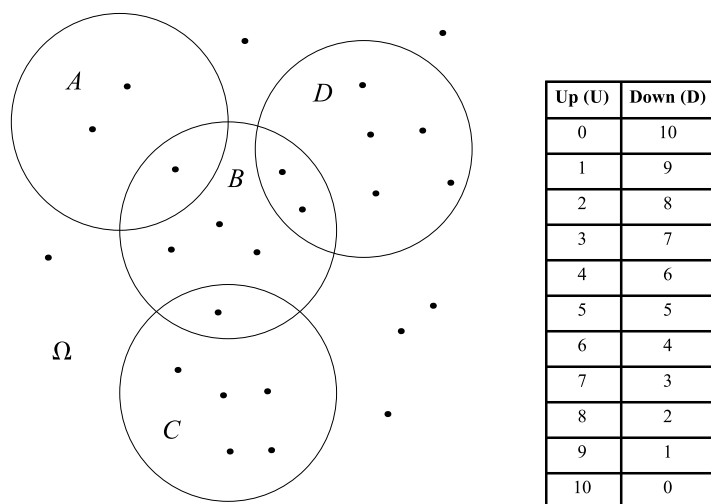


Figure 1

Table 1

In the Venn diagram above (Figure 1), each dot represents a possible outcome. Use the diagram to answer questions 1-5.

1. What is $P(A|B)$?
2. What is $P(B|A)$?
3. What is $P(C|A)$?
4. What is $P(D|B)$?
5. What is $P((A \text{ or } B)|D)$?

You drop a piece of butter toast 10 times. It will either land butter up (U) or butter down (D). The list of possible outcomes is provided in Table 1. Each outcome is equally likely.

6. Once the toast lands butter up 9 times, what is the probability it will land butter up 10 times?

7. What is the probability the toast lands butter down exactly one time?
8. Given that the toast has landed butter down twice, and butter up twice, what's the probability the toast will land butter up exactly 8 times?
9. If we've already dropped the toast twice, and it landed butter down both times, what's the probability it will land butter down exactly ten times?
10. Given that the toast has already landed butter up twice and butter down three times, what's the probability it will land butter up at least four times?