Probability Trees for Dependent Events and Set Notation

Year 10 · Probability · y10-prob

Name: _____ Date: _____

Class: _____ Score: _____ / _____

Instructions
Answer every question in Practice. Try the Challenge section once Practice is complete. 10 questions in total.

Practice

1. A bag has 5 red and 3 blue balls (8 total). Two balls are picked WITHOUT replacement. What is P(both red)? ($\frac{5}{8} \times \frac{4}{7}$)

2. P(A) = 0.35. Using P(A') = 1 - P(A), what is P(A'), the probability that A does NOT happen?

3. P(A) = 0.6, P(B) = 0.3, P(A and B) = 0.1. Using P(A or B) = P(A) + P(B) - P(A and B), what is P(A or B)?

4. A bag has 6 red and 2 blue balls (8 total). Two balls are picked WITHOUT replacement. What is P(blue then red)? ($\frac{2}{8} \times \frac{6}{7}$)

5. A dice is rolled and a coin is flipped. What is P(rolling a 6 AND flipping heads)? ($\frac{1}{6} \times \frac{1}{2}$)

6. After the first pick, the total and the count of the picked colour both decrease by 1 for the second branch. A bag has 5 red and 3 blue balls (8 total). Two balls are picked WITHOUT replacement. What is P(red then blue)? ($\frac{5}{8} \times \frac{3}{7}$)

7. The complement rule P(A') = 1 - P(A) gives the probability of A NOT happening. P(A) = 0.72. What is P(A')?

8. For events that can overlap, you must subtract P(A and B) once to avoid double-counting: P(A or B) = P(A) + P(B) - P(A and B). P(A) = 0.3, P(B) = 0.45, P(A and B) = 0.1. What is P(A or B)?

Challenge

1. A bag has 6 red and 4 blue balls (10 total). Three balls are picked WITHOUT replacement. What is P(all three red)? ($\frac{6}{10} \times \frac{5}{9} \times \frac{4}{8}$)

2. P(A) = 0.7, P(B) = 0.4, P(A and B) = 0.3. What is P(A or B)?