

Solutions

2.1 Without replacement, $P(RR) = \frac{3}{5} \times \frac{2}{4} = 0.3$.

2.2 A single blue draw has probability $\frac{2}{(3+2)} = 0.4$.

2.3 Add the two orders: $\frac{3}{5} \times \frac{2}{4} + \frac{2}{5} \times \frac{3}{4} = 0.6$.

2.4 $P(A|B) = P(A \cap B) / P(B) = 0.12 / 0.3 = 0.4$.

3.1 False. A fair die shows 1 with probability $\frac{1}{6}$ and 2 with probability $\frac{1}{6}$. The events cannot occur together, so their joint probability is zero. Independence would require $\frac{1}{36}$.

Local review guidance: show the chosen method; give the checked result; explain the condition or failed shortcut. This is authored classroom guidance.