

Solutions

Each answer shows the steps, then the **result**.

2.1

- mutually exclusive
- $P(A \cup B) = 0.3 + 0.45 = 0.75$

2.2

- $P(A \cap B) = P(A) \times P(B)$

3.1 B

- $0.6 \times 0.5 = 0.3$

3.2

(a)

- $0.8 = 0.6 + 0.5 - P(A \cap B) \Rightarrow P(A \cap B) = 0.3$

(b)

- $P(A)P(B) = 0.6 \times 0.5 = 0.3 = P(A \cap B)$, so they **are** independent

(c)

- $P(A | B) = \frac{0.3}{0.5} = 0.6$

3.3

- $P(\text{both red}) = \frac{5}{8} \times \frac{4}{7} = \frac{20}{56} = \frac{5}{14}$