1. For events *A* and *B*, the probabilities are $P(A) = \dfrac{3}{11}$, $P(B) = \dfrac{4}{11}$.

Calculate the value of $P(A \cap B)$ if

(a) $P(A \cup B) = \dfrac{6}{11}$;

(b) events *A* and *B* are independent.

Working:

Answers:

(a) ....

(b) ....

(Total 6 marks)

2. Let *A* and *B* be independent events, where $P(A) = 0.6$ and $P(B) = x$.

(a) Write down an expression for $P(A \cap B)$.

(1)

(b) Given that $P(A \cup B) = 0.8$,

　　(i) find *x*;

　　(ii) find $P(A \cap B)$.

(4)

(c) **Hence**, explain why *A* and *B* are **not** mutually exclusive.

(1)
(Total 6 marks)

3. Let *A* and *B* be independent events such that P(*A*) = 0.3 and P(*B*) = 0.8.

    (a)   Find P(*A* ∩ *B*).

    (b)   Find P(*A* ∪ *B*).

    (c)   Are *A* and *B* mutually exclusive? Justify your answer.

(Total 6 marks)

4. Events *E* and *F* are independent, with P(*E*) = $\frac{2}{3}$ and P(*E* ∩ *F*) = $\frac{1}{3}$. Calculate

    (a)   P(*F*);

    (b)   P(*E* ∪ *F*).

(Total 6 marks)

5. The events *A* and *B* are independent such that P(*B*) = 3P(*A*) and P(*A*∪*B*) = 0.68. Find P(*B*)

Working:

Answers:

....

(Total 6 marks)