

4. Given that

$$P(A) = 0.35 \quad P(B) = 0.45 \quad \text{and} \quad P(A \cap B) = 0.13$$

find

(a)  $P(A' | B')$  (2)

(b) Explain why the events  $A$  and  $B$  are not independent. (1)

The event  $C$  has  $P(C) = 0.20$

The events  $A$  and  $C$  are mutually exclusive and the events  $B$  and  $C$  are statistically independent.

(c) Draw a Venn diagram to illustrate the events  $A$ ,  $B$  and  $C$ , giving the probabilities for each region. (5)

(d) Find  $P([B \cup C]')$  (2)