7. Events A and B are such that

$$\mathrm{P}(A) = 0.5 \qquad \mathrm{P}(A \mid B) = \frac{2}{3} \qquad \mathrm{P}(A' \cup B') = 0.6$$

(a) Find $\mathrm{P}(B)$

(3)

(b) Find $\mathrm{P}(A' \mid B')$

(2)

The event C has $\mathrm{P}(C) = 0.15$

The events A and C are mutually exclusive.

The events B and C are independent.

(c) Find $\mathrm{P}(B \cap C)$

(2)

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

(5)

(Total for Question 7 is 12 marks)

TOTAL FOR PAPER IS 75 MARKS