4. The events H and W are such that

$$P(H) = \frac{3}{8} \qquad P(H \cup W) = \frac{3}{4}$$

Given that H and W are independent,

(a) show that $P(W) = \frac{3}{5}$

(4)

The event N is such that

$$P(N) = \frac{1}{15} \qquad P(H \cap N) = P(N)$$

(b) Find $P(N' \mid H)$

(2)

Given that W and N are mutually exclusive,

(c) draw a Venn diagram to represent the events H, W and N giving the exact probabilities of each region in the Venn diagram.

(5)

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Question 4 continued

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Question 4 continued

(Total for Question 4 is 11 marks)