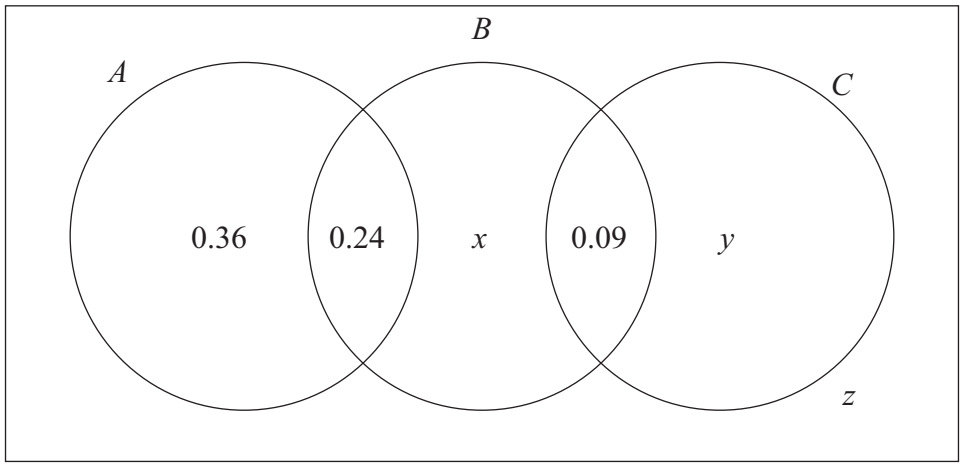
6. The Venn diagram, where x, y and z are probabilities, represents the events A, B and C and their associated probabilities.



Given that the events A and B are independent,

(a) find the value of x

(3)

Given also that $\mathrm{P}(B \mid C') = \dfrac{31}{75}$

(b) find the value of z

(2)

(c) Hence find the value of y

(2)

(d) Find

(i) $\mathrm{P}\left((B \cup C)' \cap A\right)$

(ii) $\mathrm{P}\left((A \cup B) \cap C'\right)$

(2)

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Question 6 continued

(Total for Question 6 is 9 marks)