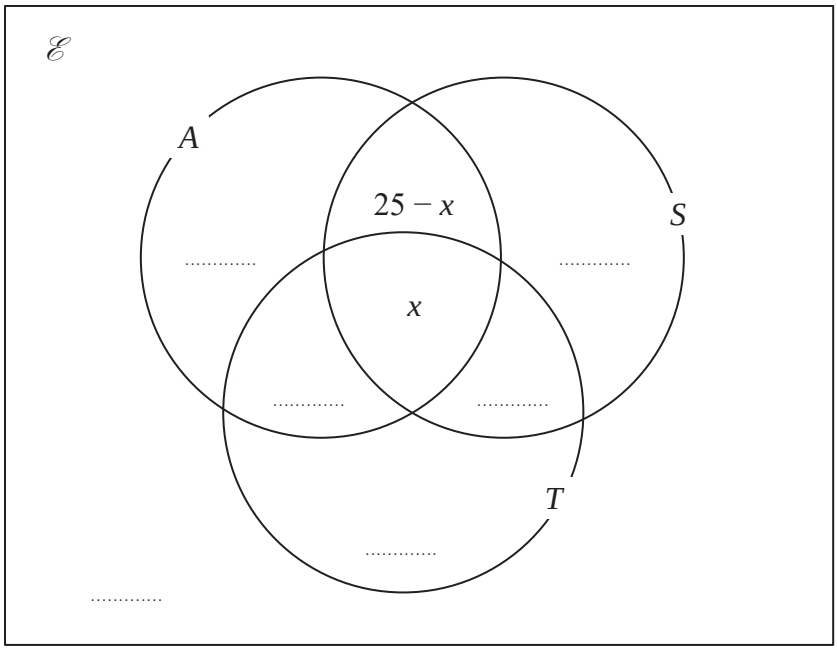
5 A travel agent asked each person in a random sample of 100 people if they have visited any of Australia (A), Sri Lanka (S) and Thailand (T).

Here is some information about their answers.

$n(\mathscr{E}) = 100,\ n(A) = 55,\ n(S) = 48,\ n(T) = 43,\ n(A \cap S) = 25,\ n(S \cap T) = 21,$

$n(A \cap T) = 23,\ n\left([A \cup S \cup T]'\right) = 7,\ n(A \cap S \cap T) = x$

This information is to be shown in a Venn diagram. The Venn diagram has been started below.



(a) Complete the Venn diagram to show the number of elements in each appropriate subset.

(3)

(b) Calculate the value of x

(2)

(c) Find $n([A \cup S] \cap T)$

(2)

One person is selected at random from the 100 people in the sample.
Given that this person has visited Australia,

(d) find the probability that this person has also visited Sri Lanka.

(1)

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Question 5 continued

(Total for Question 5 is 8 marks)