4. A manufacturer of pet food gives samples of three new flavours of cat food, A, B and C, to each of 100 customers who each own one cat. These customers are surveyed to find out whether or not their cat likes each flavour with the following results

40 cats like A

45 cats like B

50 cats like C

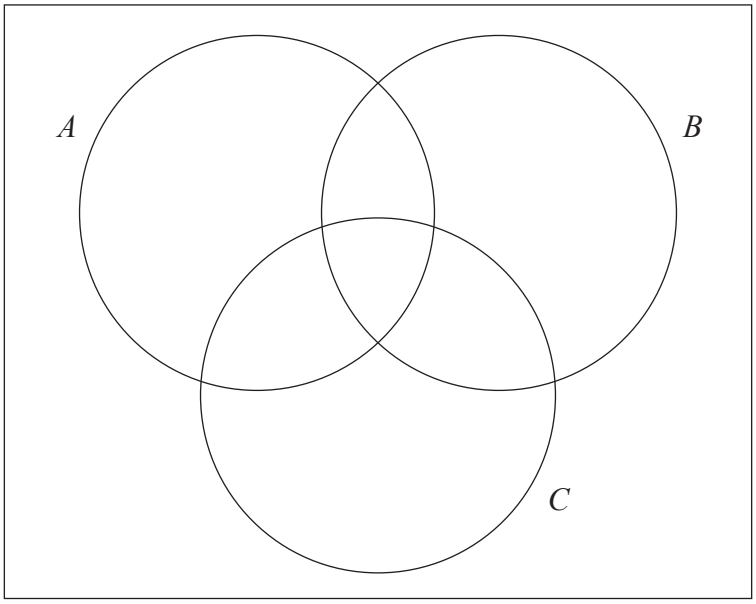
19 cats like both A and B

20 cats like both A and C

22 cats like both B and C

12 cats like all three of these flavours.

(a) Using these results complete the Venn diagram below.



(4)

For these cats,

(b) determine whether or not a cat liking flavour A is independent of it liking flavour C

(2)

(c) One of these 100 cats is chosen at random.

(i) Find the probability that it likes only one of the three flavours.

(1)

(ii) Given that it likes flavour C, find the probability that it also likes flavour B

(2)

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Question 4 continued

(Total for Question 4 is 9 marks)