

19 In a class of 30 students15 have a black pen (B)16 have a pencil (P)

3 have no black pen and no pencil

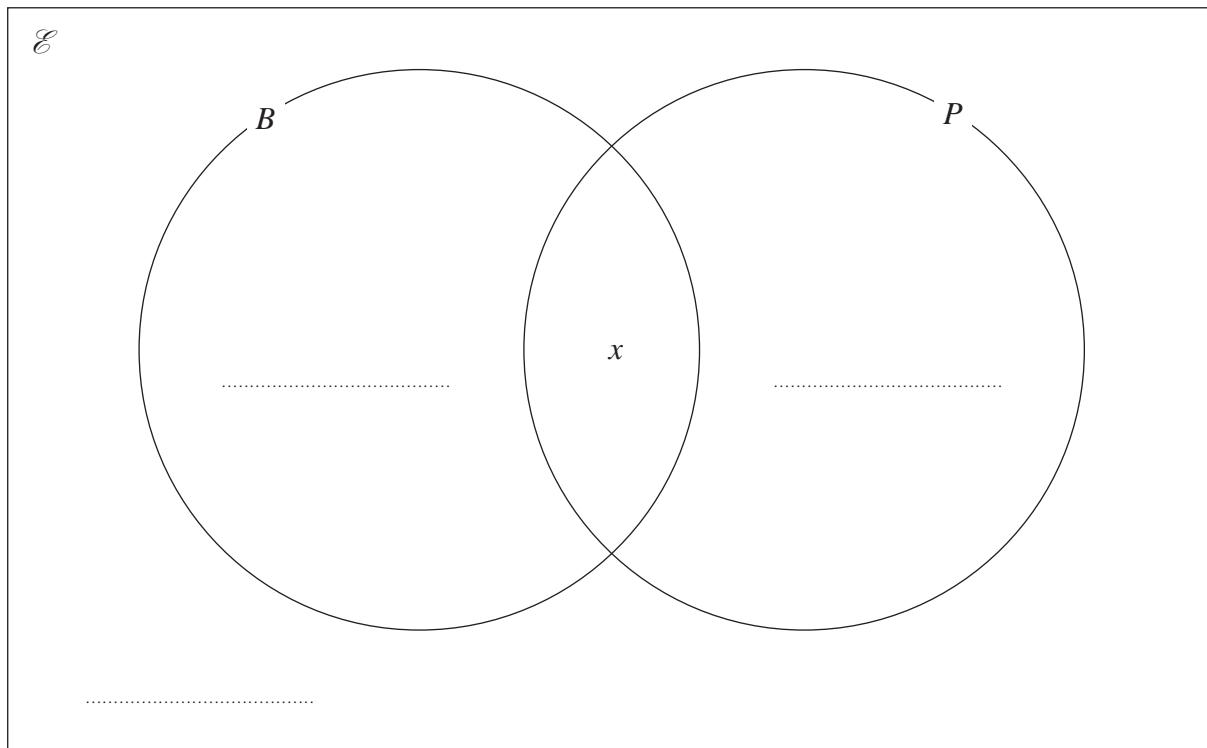
 x have a black pen and a pencil

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

- (a) Use the information above to complete the Venn diagram, giving answers in terms of x where necessary.



(2)

- (b) Find the value of x

$$x = \dots$$

(2)

- (c) One of these 30 students is chosen at random.

Write down the probability that this student has a black pen but does not have a pencil.

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(1)

(Total for Question 19 is 5 marks)

