5 All 50 students at *Holborn College* have to study at least one of Physics (P), Chemistry (C) and Biology (B).

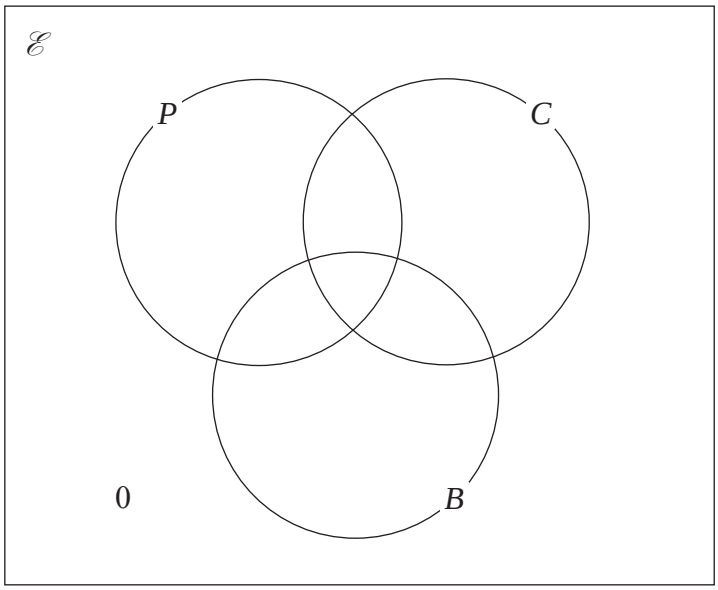
Of these 50 students

5 study all three subjects
12 study Physics and Biology
7 study Physics and Chemistry
13 study Chemistry and Biology
4 study Chemistry only

The number of students at *Holborn College* who study Biology only is three times the number of students at *Holborn College* who study Physics only.

Let x be the number of students at *Holborn College* who study Physics only.

(a) Complete the Venn diagram with all of this information.



(4)

(b) Find the value of x.

(2)

(c) Write down

(i) $n(B \cup P')$

(ii) $n([B \cup P] \cap C)$

(2)

A student at *Holborn College* is to be chosen at random.

Given that this student studies Physics,

(d) find the probability that this student does **not** study either Chemistry or Biology.

(2)

Question 5 continued

Question 5 continued

(Total for Question 5 is 10 marks)