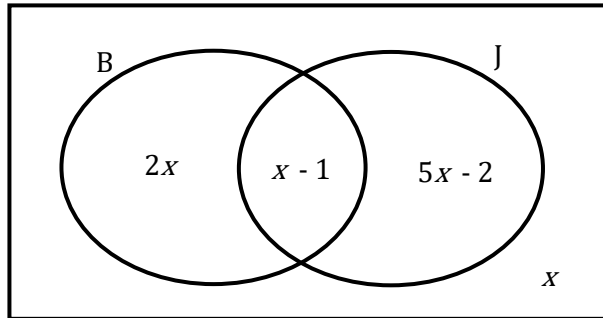


a)

In a survey, 60 students were asked whether they have a bank account (B) and whether they have a part-time job (J).

The number of students who had neither a bank account nor a part-time job was  $x$ . The Venn diagram shows the results in terms of  $x$ .



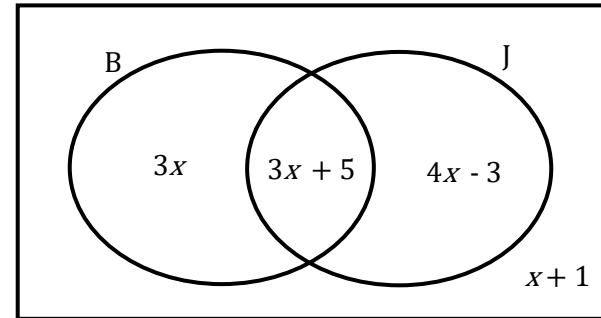
One of the 60 students is chosen at random.  
Find the probability that they have a bank account.

Write an expression for the total number of people	$2x + x - 1 + 5x - 2 + x = 9x - 3$
Form and solve an equation in terms of $x$	$9x - 3 = 60$ $9x = 63$ $x = 7$
Find the number of people who have a bank account	$2x + x - 1 = 3x - 1$ $3 \times 7 - 1 = 20$
Write this as a fraction of the total number of people	$\frac{20}{60} = \frac{1}{3}$

b)

In a survey, 80 students were asked whether they have a bank account (B) and whether they have a part-time job (J).

The number of students who had neither a bank account nor a part-time job was  $x + 1$ . The Venn diagram shows the results in terms of  $x$ .



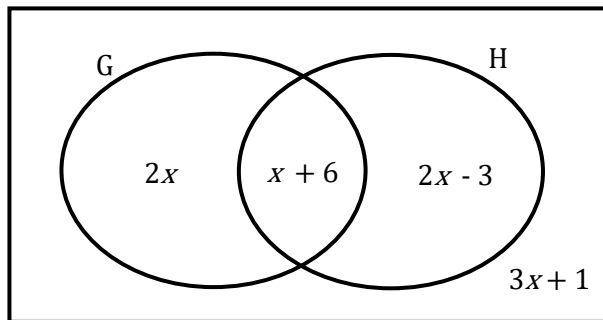
One of the 80 students is chosen at random.  
Find the probability that they have a part-time job.

Write an expression for the total number of people	$3x + 3x + 5 + 4x - 3 + x + 1 = 11x + 3$
Form and solve an equation in terms of $x$	$11x + 3 = 80$ $11x = 77$ $x = 7$
Find the number of people who have a part-time job	
Write this as a fraction of the total number of people	

c)

In a survey, 100 pupils were asked whether they study geography (G) and whether they study history (H).

The number of pupils who studied neither geography nor history was  $3x + 1$ . The Venn diagram shows the results in terms of  $x$ .



One of the 100 students is chosen at random.

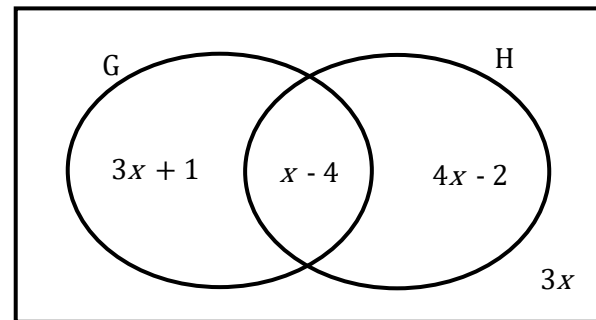
Find the probability that they study neither geography nor history.

Write an expression for the total number of people	$2x + x + 6 + 2x - 3 + 3x + 1 = 8x + 4$
Form and solve an equation in terms of $x$	
Find the number of people who study neither geography or history	
Write this as a fraction of the total number of people	

d)

In a survey, 50 pupils were asked whether they study geography (G) and whether they study history (H).

The number of students who studied neither geography nor history was  $3x$ . The Venn diagram shows the results in terms of  $x$ .



One of the 50 students is chosen at random.

Find the probability that they study history.