Answer all ELEVEN questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Solve the equation $3\log_3 x - 8\log_x 3 = 10$

(6)

Question 1 continued

(Total for Question 1 is 6 marks)

2 (a) Using the axes below, sketch the line with equation

(i) $y + 2x = -5$ (ii) $y = x + 4$

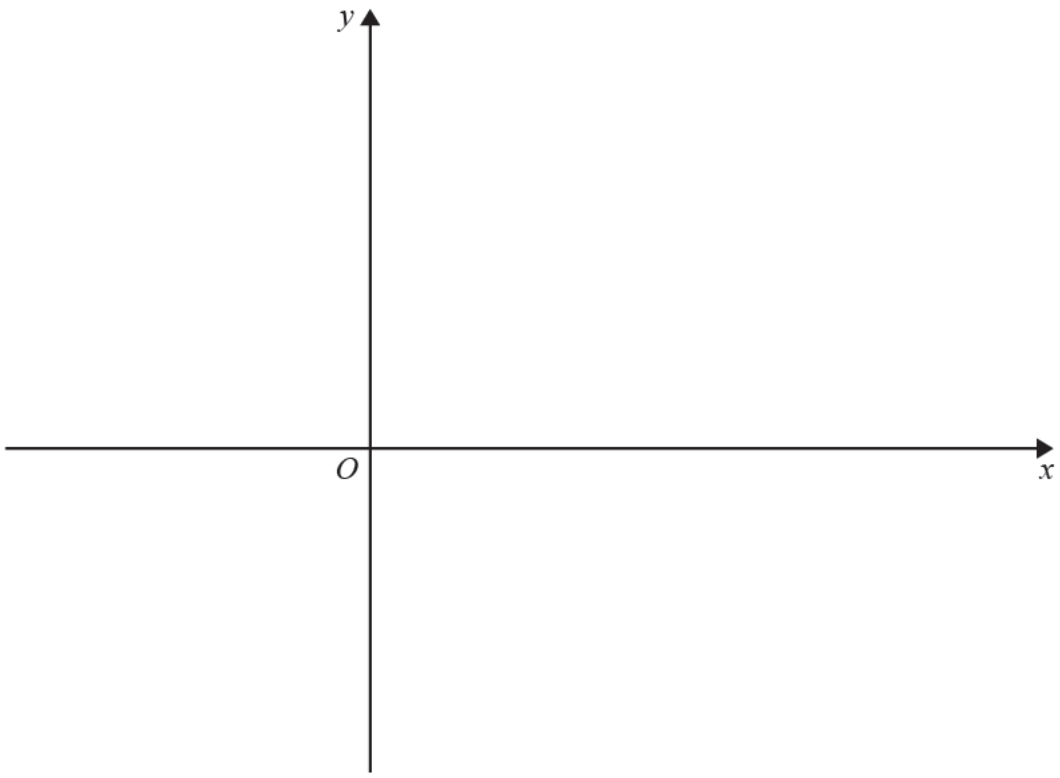
Show the coordinates of the points where each line crosses the coordinate axes.

(2)

(b) Show, by shading, the region R defined by the inequalities

$y + 2x > -5$ $y < x + 4$ $x < 1$

(1)



Question 2 continued

(Total for Question 2 is 3 marks)