

LC 2017: PAPER 1

QUESTION 4 (25 MARKS)**Question 4 (a)**

$$11x - 5(2x - 1) = 3(6 - x) + 3$$

$$11x - 10x + 5 = 18 - 3x + 3$$

$$11x - 10x + 3x = 18 + 3 - 5$$

$$4x = 16$$

$$\therefore x = \frac{16}{4} = 4$$

Question 4 (b)

$$y + 5 = 2x \Rightarrow y = 2x - 5 \dots (1)$$

$$x^2 + y^2 = 25 \dots (2)$$

$$x^2 + (2x - 5)^2 = 25$$

$$x^2 + 4x^2 - 20x + 25 = 25$$

$$x^2 + 4x^2 - 20x + 25 - 25 = 0$$

$$5x^2 - 20x = 0$$

$$x^2 - 4x = 0$$

$$x(x - 4) = 0 \Rightarrow x = 0, 4$$

Into (1):

$$x = 0: y = 2(0) - 5 = 0 - 5 = -5$$

$$x = 4: y = 2(4) - 5 = 8 - 5 = 3$$

Solutions:

$$(x, y) = (0, -5)$$

$$(x, y) = (4, 3)$$
