

LC 2018: PAPER 1

QUESTION 3 (25 MARKS)

Question 3 (a)

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$2x^2 - 7x - 3 = 0$$

$$a = 2, b = -7, c = -3$$

$$x = \frac{-(-7) \pm \sqrt{(-7)^2 - 4(2)(-3)}}{2(2)} = \frac{7 \pm \sqrt{49 + 24}}{4}$$

$$= \frac{7 \pm \sqrt{73}}{4} = -0.39, 3.89$$

Question 3 (b)

$$2a + 3b = 15 \dots (1)$$

$$5a + b = -8 \dots (2) (\times -3)$$

$$2a + 3b = 15$$

$$\underline{-15a - 3b = 24}$$

$$-13a = 39 \Rightarrow a = -3$$

$$\text{Into (2): } 5(-3) + b = -8 \Rightarrow -15 + b = -8$$

$$\therefore b = 7$$

$$\text{Answer: } (-3, 7)$$

MARKING SCHEME NOTES

Question 3 (a) [Scale 10D (0, 2, 6, 8, 10)]

- 2: • correct roots formula
 • a or b or c identified
 • attempt at factorising
 • correct answer without work

6: • formula fully substituted

8: • one root calculated

- $x = \frac{7 \pm \sqrt{73}}{4}$ and stops

Question 3 (b) [Scale 15D (0, 3, 7, 13, 15)]

3: • effort to equate a or b coefficient in both equations

- correct answer without work

7: • eliminates one unknown

13: • 1 unknown found