

LC 2018: PAPER 1**QUESTION 6 (25 MARKS)****Question 6 (a)**

$$(x + 5)(3x - 4) - 3(x^2 + 2) + 4 = 0$$

$$3x^2 - 4x + 15x - 20 - 3x^2 - 6 + 4 = 0$$

$$11x - 22 = 0$$

$$11x = 22$$

$$\therefore x = 2$$

Question 6 (b)

$$\frac{5}{x+3} - \frac{1}{x} = \frac{1}{2} \quad [\text{Multiply across by } 2x(x+3)]$$

$$\frac{5 \times 2x(x+3)}{(x+3)} - \frac{2x(x+3)}{x} = \frac{2x(x+3)}{2}$$

$$10x - 2(x+3) = x(x+3) \Rightarrow 10x - 2x - 6 = x^2 + 3x$$

$$x^2 + 5x + 6 = 0 \Rightarrow (x-3)(x-2) = 0$$

$$\therefore x = 2, 3$$

MARKING SCHEME NOTES**Question 6 (a) [Scale 10C (0, 3, 8, 10)]**

- 3:**
- any correct multiplication
 - correct answer without work
- 8:**
- multiplication fully correct
 - error in expanding brackets but finishes correctly

Question 6 (b) [Scale 15D (0, 3, 7, 13, 15)]

- 3:**
- common denominator identified
 - $5x - (x + 3)$ or similar
 - correct answer without work, 2 and/or 3
- writes $\frac{-b \pm \sqrt{(b)^2 - 4ac}}{2a}$
- 7:**
- $10x - 2(x + 3) = x(x + 3)$ or similar
- 13:**
- $x^2 - 5x + 6 = 0$ or equivalent