

## LC 2015 (SET B): PAPER 1

### QUESTION 3 (25 MARKS)

#### Question 3 (a)

$$\begin{aligned} 3(4 - 5x) - 2(5 - 6x) &\leftarrow \text{Multiply out brackets.} \\ = 12 - 15x - 10 + 12x &\leftarrow \text{Add like terms.} \\ = 2 - 3x \end{aligned}$$

#### Question 3 (b)

$$2 - 3x \geq -6, n \in \mathbb{N} \leftarrow \text{Bring numbers to the left and } x\text{'s to the right.}$$

$$2 + 6 \geq 3x$$

$$8 \geq 3x \leftarrow \text{Divide both sides by 3.}$$

$$\frac{8}{3} \geq x$$

$$\therefore x \leq \frac{8}{3}$$

$$\therefore x = 1, 2 \leftarrow \text{The natural numbers less than or equal to } \frac{8}{3} \text{ are 1 and 2.}$$

#### Question 3 (c)

$$(2 - 3x) \times g(x) = 15x^2 - 22x + 8 \leftarrow \text{Isolate } g(x) \text{ by dividing both sides by } (2 - 3x).$$

$$g(x) = \frac{15x^2 - 22x + 8}{(2 - 3x)} \leftarrow \text{Factorise the quadratic.}$$

$$= \frac{(5x - 4)(3x - 2)}{(2 - 3x)} \leftarrow \text{Take a minus sign out of } (3x - 2) \text{ so the bracket is the same as on the bottom.}$$

$$= \frac{-(5x - 4)(\cancel{2 - 3x})}{(\cancel{2 - 3x})} \leftarrow \text{Cancel brackets that are the same.}$$

$$= -(5x - 4) \leftarrow \text{The negative sign changes the signs of each term inside the bracket.}$$

$$= 4 - 5x$$

#### MARKING SCHEME NOTES

##### Question 3 (a) [Scale 15B (0, 3, 15)]

3: • Some correct attempt at simplifying

##### Question 3 (b) [Scale 5C (0, 3, 4, 5)]

Note: Accept  $\{0, 1, 2\}$

3: • Any correct transposition

4: • Not more than two errors in solving

- $x \leq \frac{8}{3}$

##### Question 3 (c) [Scale 5C (0, 3, 4, 5)]

3: • Formulate division

- Attempt at factorising

4: • One full correct step in division

- $(3x - 2)(5x - 4)$  and stops