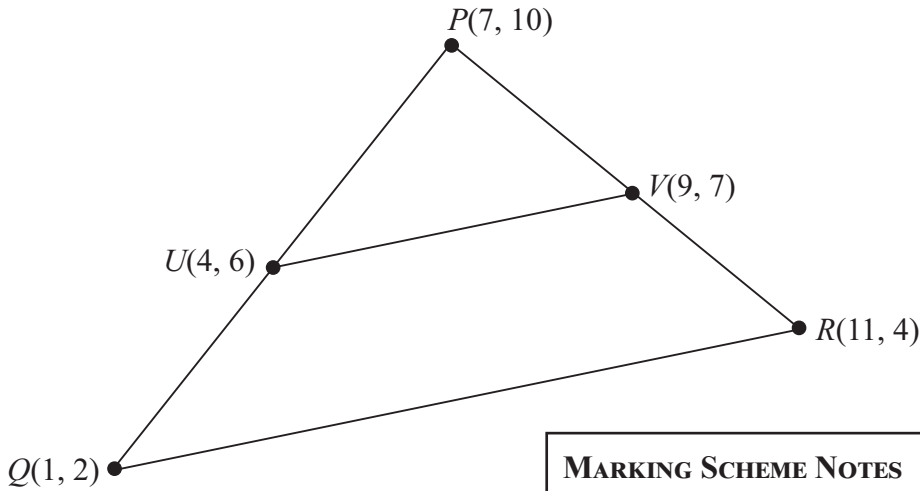


**LC 2018: PAPER 2****QUESTION 2 (25 MARKS)****Question 2 (a)**

$$P(7, 10) = (x_1, y_1), R(11, 4) = (x_2, y_2)$$

$$V\left(\frac{7+11}{2}, \frac{10+4}{2}\right) = V(9, 7)$$

**Question 2 (b)**

$$U(4, 6) = (x_1, y_1), V(9, 7) = (x_2, y_2)$$

$$m_1 = \frac{7-6}{9-4} = \frac{1}{5}$$

$$Q(1, 2) = (x_1, y_1), R(11, 4) = (x_2, y_2)$$

$$m_2 = \frac{4-2}{11-1} = \frac{2}{10} = \frac{1}{5}$$

$$m_1 = m_2 \Rightarrow UV \parallel QR$$

**Question 2 (c)**

$$P(7, 10) \rightarrow (6, 8) = (x_1, y_1)$$

$$Q(1, 2) \rightarrow (0, 0)$$

$$R(11, 4) \rightarrow (10, 2) = (x_2, y_2)$$

$$\text{Area} = \frac{1}{2}|6(2) - 8(10)| = \frac{1}{2}|12 - 80| = 34$$

**Question 2 (d)**

$$U(4, 6) \rightarrow V(9, 7) \text{ [Add 5, Add 1]}$$

$$Q(1, 2) \rightarrow S(6, 3)$$

**MARKING SCHEME NOTES****Question 2 (a) [Scale 5C (0, 2, 3, 5)]**

- 2: • Correct relevant formula with some correct substitution  
• Correct translation identified
- 3: • Formula fully substituted
- 5: • Correct answer without work

**Question 2 (b) [Scale 5D (0, 2, 3, 4, 5)]**

- 2: • Correct relevant formula with some correct or consistent substitution
- 3: • One or both formulae fully substituted
- 4: • Both slopes calculated and no conclusion

**Question 2 (c) [Scale 10D (0, 2, 5, 8, 10)]**

- 2: • Area of triangle formula with some relevant substitution  
• Translation of any relevant point to (0, 0)
- 5: • Area of triangle formula substituted correctly with TWO from  $P, Q$  and  $R$
- 8: • Formula fully substituted with translated points  
• Area of triangle found from formula fully substituted with TWO from  $P, Q$  and  $R$

**Question 2 (d) [Scale 5C (0, 2, 3, 5)]**

- 2: • Work with a translation which indicates an understanding of the concept  
• Mid-Point Formula with some relevant substitution
- 3: • An incorrect translation applied correctly  
• Correct translation applied to an incorrect point  
• Correct formula fully substituted
- 5: • Correct answer without work