

LC 2018: PAPER 2

QUESTION 5 (25 MARKS)

Question 5 (a)

$$|PQ| = \sqrt{5^2 + 2^2} = \sqrt{29} \text{ cm}$$

$$\text{Area} = \sqrt{29} \times \sqrt{29} = 29 \text{ cm}^2$$

MARKING SCHEME NOTES

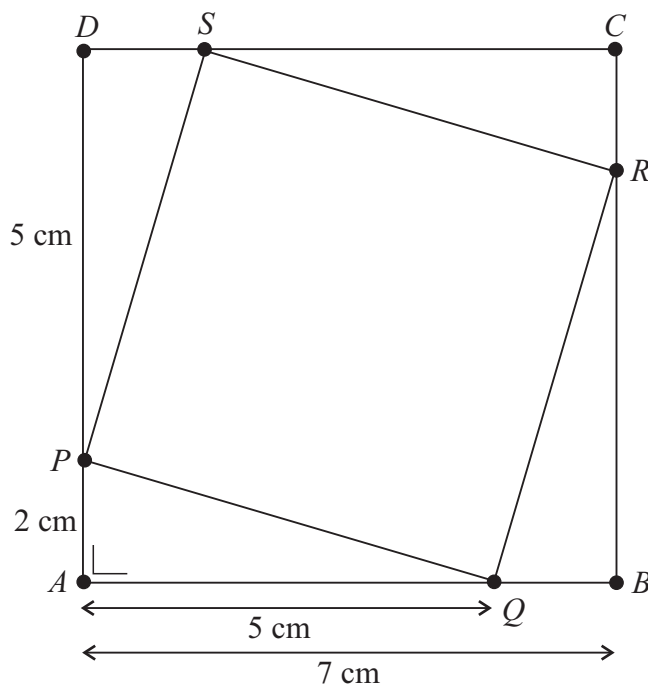
Question 5 (a) [Scale 10C (0, 3, 7, 10)]

3: • Any work of merit e.g. Identifies

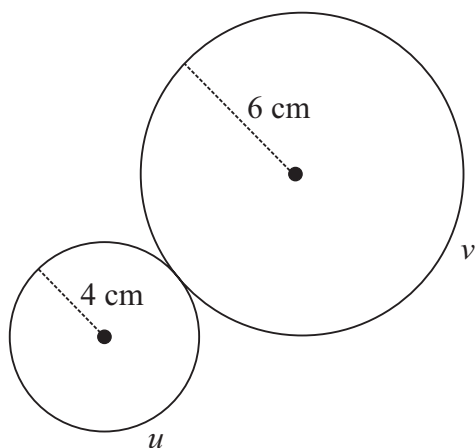
$$|QB| = 2$$

7: • Correct relevant expression for Area of $PQRS$ fully substituted

10: • Correct answer without work



Question 5 (b)



MARKING SCHEME NOTES

Question 5 (b) (i) + (ii) [Scale 15D (0, 4, 7, 11, 15)]

4: • Circumference formula with some substitution

• Any work of merit e.g. ratio of two circles

7: • One circumference found (in terms of π)

• Both substitutions fully correct

11: • Both circumferences found (in terms of π)

• Finds the number of rotations wheel u makes

(i) $u: L_1 = 2\pi(4) = 8\pi \text{ cm}$

$v: L_2 = 2\pi(6) = 12\pi \text{ cm}$

(ii) Total distance travelled by $v = 12\pi \times 1000 = 12\,000\pi \text{ cm}$

Total distance travelled by $u = 8\pi \times \text{Number of rotations} = 12\,000\pi \text{ cm}$

$$\therefore \text{Number of rotations} = \frac{12\,000\pi}{8\pi} = 150$$