

Question	Scheme	Marks	AOs
1 (a)	$\text{Area}(R) \approx \frac{1}{2} \times 0.5 \times \left[1 + 2(e^{0.05} + e^{0.2} + e^{0.45}) + e^{0.8} \right]$	B1	1.1b
		M1	1.1b
	$\left\{ = \frac{1}{4} \times 10.90751301\dots = 2.726878252\dots \right\} = 2.73 \text{ (2 dp)}$	A1	1.1b
		(3)	
(b)(i)	$\left\{ \int_0^2 \left(4 + e^{\frac{1}{5}x^2} \right) dx \right\} = 4(2) + "2.73" = 10.73 \text{ (2 dp)}$	B1ft	2.2a
(b)(ii)	$\left\{ \int_1^3 e^{\frac{1}{5}(x-1)^2} dx \right\} = "2.73" \text{ (2 dp)}$	B1ft	2.2a
		(2)	

(5 marks)

Question 1 Notes:

(a)

B1: Outside brackets $\frac{1}{2} \times 0.5$ or $\frac{0.5}{2}$ or 0.25 or $\frac{1}{4}$

M1: For structure of trapezium rule [.....].

No errors are allowed, e.g. an omission of a y-ordinate or an extra y-ordinate or a repeated y-ordinate

A1: Correct method leading to a correct answer only of 2.73

(b)(i)

B1ft: 10.73 or a value which is 8 + their answer to part (a)

Note: Do not allow an answer of 10.6900... which is found directly from integration

(b)(ii)

B1ft: 2.73 or a value which is the same as their answer to part (a)

Note: Do not allow an answer of 2.6900... or 2.69 which is found directly from integration