

Q1. (2018)

11	Alternative method 1 – width of small rectangle is x (any letter)		
	x and $2x$ or $x + 2x + x + 2x$ or $6x$	M1	oe
	$x + 2x + x + 2x = 15$ or $6x = 15$	M1dep	oe
	$(x =) 2.5$	A1	from correct working or with 5 as the other dimension or with 7.5 as the length of the large rectangle
	25	A1ft	ft 10 $\times$ their 2.5 with M1M1 awarded
	Alternative method 2 – length of small rectangle is x (any letter)		
	x and $\frac{x}{2}$ or $x + \frac{x}{2} + x + \frac{x}{2}$ or $3x$	M1	oe
	$x + \frac{x}{2} + x + \frac{x}{2} = 15$ or $3x = 15$	M1dep	oe
	$(x =) 5$	A1	from correct working or with 2.5 as the other dimension or with 7.5 as the length of the large rectangle
	25	A1ft	ft 5 $\times$ their 5 with M1M1 awarded
	Alternative method 3 – a = width of small rectangle and b = length of small rectangle (any letters)		
	$b = 2a$ or $10a$ or $5b$	M1	correct expression for perimeter of the large rectangle in one variable
	$6a = 15$ or $3b = 15$	M1dep	correct equation in one variable
	$(a =) 2.5$ or $(b =) 5$	A1	from correct working or with both values correct or with one value correct and 7.5 as the length of the large rectangle
	25	A1ft	ft 10 $\times$ their a or 5 $\times$ their b with M1M1 awarded

	Alternative method 4 – trial and improvement using ratio of sides		
	length = 2 × width seen or implied	M1	
	Two correctly evaluated trials for perimeter of small rectangle with length = 2 × width	M1dep	eg 8 + 4 + 8 + 4 = 24 and 10 + 5 + 10 + 5 = 30
	2.5 and 5	A1	implied by 2.5 + 5 + 2.5 + 5 = 15
	25	A1	
1(cont)	Additional Guidance		
	Note that there is no ft in method 4		
	In all methods, marks can be awarded for annotation of the diagram, with lengths clearly identified, or working inside or alongside the diagram eg 2.5 and 5 marked correctly as the dimensions of the small rectangle 2.5 marked as the width of the small rectangle and 7.5 marked as the length of the large rectangle		M1M1A1 M1M1A1
	If full marks not awarded, mark both the diagram and working then award the better mark		
	In alt 4, one or more trials may be crossed out to indicate that they do not give the correct perimeter. Do not treat this as the usual crossed out work not to be marked if replaced.		

Q2. (2023)

Q	Answer	Mark	Comments
26	Alternative method 1		
	$20\pi \div 2\pi$ or 10	M1	oe may be seen on diagram implied by diameter = 20
	$x^2 + x^2 = (\text{their } 10)^2$ or $2x^2 = 100$ or $x^2 = 50$ or their $10 \times \sin 45$ or their $10 \times \cos 45$ or their $10 \times \frac{1}{\sqrt{2}}$	M1	oe any letter (condone a) their 10 is their length OQ (the radius of the circle)
	$\sqrt{\text{their } 10^2 \div 2}$ or $\sqrt{50}$ or $5\sqrt{2}$ or $4 \times \sqrt{50}$ or $4 \times \text{their } 10 \times \sin 45$ or $4 \times \text{their } 10 \times \cos 45$ or $40 \times \frac{1}{\sqrt{2}}$ or $\frac{40\sqrt{2}}{2}$ or $20\sqrt{2}$	M1dep	oe value for the length of one side of the square or the perimeter of the square eg $\frac{10}{\sqrt{2}}$ dep on previous mark
	2 with full working seen for M3	A1	