Area of Compound Shapes

November 2023 Paper 3

Question	Answer	Mark	Mark scheme	Additional guidance
18	4.8	P1	for finding missing length, eg 14 – 3.8 – 3.8 (= 6.4)	
		P1	for method to find area of triangle, eg [missing length] × 6 ÷ 2 (= 19.2)	Where [missing length] can be "6.4" or identified in working or on the diagram as the missing length
		P1	for method to find area of rectangle, eg [area of triangle] × 3.5 (= 67.2) **or** writes an expression for the area of rectangle eg 14w or 14w ÷ 3.5	[area of triangle] must be identified as the area of the triangle OR come from: [missing length] × 6 ÷ 2 or [missing length] × 6 or [decimal] × 6 ÷ 2
		P1	for method to link both areas eg 14w = [area of triangle] × 3.5 or [area of triangle] = 14w ÷ 3.5 or [area of triangle] × 3.5 ÷ 14	
		A1	cao	Award 0 marks for a correct answer without correct supportive working.

Question	Answer	Mark	Mark scheme	Additional guidance
21	186.15	P1	for correctly finding the area of at least three sections, eg 3 of 11×7 (= 77), **or** 9×7 (= 63), **or** $\frac{1}{2} \times 11 \times 9$ (= 49.5), **or** $\frac{1}{4} \times \pi \times 7^2$ (= 38.4845..)	Note a trapezium for the rectangle and triangle should be classed as two areas. Accept figures rounded or truncated to 1 dp or better throughout.
		P1	for a method to find the number of bags required for one area or a combination of areas eg "77" ÷ 14 (= 5.5) **or** "227.9845.." ÷ 14 (= 16.2846…)	
		P1	for method to work out the total area for all four sections eg "77" + "63" + "49.5" + "38.4845…" (= 227.9845…) or adding the exact number of bags per section for all four sections eg "5.5" + "4.5" + "3.53.." + "2.74.." (= 16.28...)	This mark is dependent upon correct processes seen for all four sections.
		P1	for method to find the cost, eg integer number of bags × 10.95	integer number of bags must come from area ÷ 14 rounded up
		A1	cao	

Question	Answer	Mark	Mark scheme	Additional guidance
22 (a)	Yes (supported)	P1	for a process to find the area of one shape, eg 10×8 (= 80) **or** 10×5 (= 50) **or** 8×6 (= 48) **or** $(10 - 6) \times 5$ (= 20) **or** $(10 - 6) \times (8 - 5)$ (= 12) **or** $6 \times (8 - 5)$ (= 18) **or** 5×6 (= 30)	Do not award this mark if they go on to multiply by a third length
		P1	for a complete process to find the total area, eg "80" – "12" (= 68) or "50" + "18" (= 68) or "48" + "20" (= 68)	
		P1	for a complete process to find the area covered by 3 tins eg $3 \times 2.5 \times 10$ (= 75) **or** for a complete process to find the number of litres needed eg "68" ÷ 10 (= 6.8) or [area] ÷ 10 **or** for a complete process to find the number of tins needed eg "68" ÷ 10 ÷ 2.5 (= 2.72) or [area] ÷ 10 ÷ 2.5	[area] is what they believe to be the area
		A1	for 'Yes' supported by correct figures eg 68 (m^2) **and** 75 (m^2) **or** 6.8 (litres) **and** 7.5 (litres) **or** 68 (m^2) **and** 2.72 (tins needed)	Ignore incorrect amount of paint left over if correct figures seen.
(b)	No effect (supported)	C1	ft from (a) for "has no effect" with reason **Acceptable examples** No effect, she will need less paint It won't change, she will still have enough No, she will have more paint left over No, as this will cover 82.5m^2 **Not acceptable examples** Petra will need less paint She will have more paint left over She won't have enough paint She will need more paint	Must have a decision in (a). Must include a decision eg yes / no / no effect. If figures included in the statement they must be correct for their [area] in (a).