1	E.g. 12×9 (=108) **or** $(9 - 6) \times x$ (= 3x)		4	M1 for one correct relevant area
	E.g. $129 - '108'$ (= 21) **or** $'108' + '3x' = 129$ **or**			M1 dep on M1 for 129 used correctly with another area **or** for a correct equation (ft) with bracket(s) expanded
	E.g. $'21' \div (9 - 6)$ **or** $x = \dfrac{129 - '108'}{3}$			M1 for a complete method
		7		A1
				Total 4 marks

2	$8 \times x$ (= 8x) **or** $14 \times x$ (= 14x) **or** $(14 - 8) \times x$ (= 6x) **or** $\frac{1}{2} \times (14 - 8) \times (13 - x)$ (= 39 - 3x) **or** $\dfrac{13 + x}{2} \times (14 - 8)(=39 + 3x)$ **or** $\frac{1}{2} \times 13 \times (14 - 8)$ (=39) **or** $\dfrac{8 + 14}{2} \times x$ (= 11x) **or** 14×13 (=182) **or** $8 \times (13 - x)$ (= 104 - 8x) **or** $\left(\dfrac{8 + 14}{2} \times (13 - x)\right)$ (= 143 - 11x) oe		4	M1 one correct area linked to the shape
	$14x + 6 \times \frac{1}{2} \times (13 - x)$ oe eg $8x + \dfrac{x + 13}{2} \times 6$ **or** $\dfrac{8 + 14}{2} \times x + \dfrac{13 \times (14 - 8)}{2}$ **or** "182" $- \left(\dfrac{8 + 14}{2} \times (13 - x)\right)$ **or** $11x + 39$ oe			M1 ft from correct working expression for total area of shape – with no parts omitted or duplicated Adding up parts of given shape **or** Large rectangle subtracting trapezium (or subtracting (rectangle + triangle))
	eg $11x + 39 = 91.8$ **or** $14x + 39 - 3x = 91.8$ **or** "182" $- 143 + 11x = 91.8$ or $16x + 6x + 78 = 183.6$ oe			M1 fully correct equation with no fractions (allow 91.8 or multiples of 91.8 but no other decimals) **and** no brackets
	Working not required, so correct answer scores full marks (unless from obvious incorrect working)	4.8		A1 or $4\frac{4}{5}$ oe or $\frac{24}{5}$ oe
				Total 4 marks

3	$(AB^2 =) \ 7.5^2 - 6^2 \ (= 20.25)$ **or** eg $(BAC =)\sin^{-1}\left(\dfrac{6}{7.5}\right)(= 53.1...)$ **or** $\cos(BCA) = \dfrac{6}{7.5}(= 0.8)$		6	M1 for a correct first step to find AB **or** a complete method to find angle BAC **or** a correct first step to find angle BCA
	$(AB =) \ \sqrt{7.5^2 - 6^2} \ (= 4.5)$ **or** $(AB =)\dfrac{6}{\tan"53.1"}(= 4.5...)$ **or** $(AB =)7.5\cos"53.1"(= 4.5...)$ **or** $(BCA =)\cos^{-1}\left(\dfrac{6}{7.5}\right)(= 36.8...)$			M1 for a complete method to find AB or angle BCA
	$(Area \ ABC =) \dfrac{1}{2} \times 6 \times "4.5" \ (= 13.5)$ **or** $(Area \ ABC =)\dfrac{1}{2} \times 6 \times 7.5 \times \sin("36.8")(= 13.47... \ \text{or} \ 13.5)$			M1 ft [their labelled AB] or [their labelled BCA] eg for $\dfrac{1}{2} \times 6 \times$ [their labelled AB] **or** $\dfrac{1}{2} \times 6 \times 7.5 \times \sin$[their labelled BCA]
	$(Area \ DAC =) \ 31.5 - "13.5" \ (= 18)$ **or** $"13.5" + 0.5 \times 7.5 \times AD = 31.5$ oe			M1 ft (dep on previous M1) allow 31.5 – [their area]
	$(AD =) \ ("18" \div 7.5) \div 0.5$ oe			M1 for a complete method to find AD, dependent on correct working
		4.8		A1 accept 4.78 – 4.81
				Total 6 marks

4	$\sqrt{36}\ (=6)$ **or** 6 **or** 6×6		4	M1	for method to find the length of the square – may be seen in later working
	eg $\pi\times\left(\dfrac{[\text{their }6]}{2}\right)^2\div2(=14.1...\text{ or }4.5\pi\text{ or }\dfrac{9}{2}\pi)$ **or** $\pi\times\left(\dfrac{[\text{their }6]}{2}\right)^2(=28.2...\text{ or }9\pi)$			M1	for method to find the area of one semicircle **or** circle or the incorrect number of semicircles or circles provided correct area of circle formula is seen for [their 6] allow any value if there is a clear implication this is their side length of square.
	eg $4\times$ "14.1" $(=56.5...$ or $18\pi)$ **or** 2×28.2 $(=56.5...$ or $18\pi)$			M1	for a complete method to find the total area of the semicircles ft from previous M1 [if the pupil multiplies again and uses the incorrect number of circles or semicircles this mark is not awarded]
		92.5		A1	accept 92.4 – 92.6 (not in terms of π)
					Total 4 marks

5	28×12 $(=336)$ or 5×12 $(=60)$ or 18×12 $(=216)$ or 28×20 $(=560)$ or $\dfrac{1}{2}(CD+"18")"8"$ oe eg $72+4CD$ [numbers in " " come from correct working] **Check diagram for areas**		4	M1	For a correct method to find the area of a rectangle (may be seen as part calculation) or a correct expression for the area of the trapezium with numbers substituted. Allow for other correct method to find area linked to this shape.
	"336" $+0.5("18"+CD)"8"=434$ oe eg $4("18"+CD)=98$ or eg $0.5("18"+CD)"8"="98"$ oe eg $\dfrac{1}{2}(18+CD)=12.25$ or $"560"-2(0.5(5+x)"8")=434$ oe (where x is horizontal from D to perp with AF) [numbers in " " come from correct working]			M1	correct use of their values from correct working for an equation involving CD (CD could be labelled with any letter)
	eg $(CD=)\dfrac{196-144}{8}\left(=\dfrac{52}{8}\right)$ or $(CD=)\dfrac{98-72}{4}\left(=\dfrac{26}{4}\right)$ or $(CD=)\dfrac{434+152-560}{4}$ or $(CD=)2\times12.25-18$ or $98\times2(=196)$, $"196"\div8(=24.5)$, $"24.5"-18$			M1	a correct process to solve a correct equation **or** a correct process to find CD using **correct values**
		6.5		A1	oe
					Total 4 marks

6	eg 2.5×6.5 $(=16.25)$ **or** $0.5\times6.5\times1$ $(=3.25)$ **or** 3.5×6.5 $(=22.75)$		4	M1	M2 for $0.5(2.5+3.5)\times6.5$ $(=19.5)$ **or** $2\times(0.5(2.5+3.5)\times6.5)$ $(=39)$
	$2.5\times6.5+0.5\times6.5\times1$ $(=19.5)$ **or** $2\times(2.5\times6.5+0.5\times6.5\times1)$ $(=39)$ **or** $3.5\times6.5-0.5\times6.5\times1$ $(=19.5)$ **or** $2\times(3.5\times6.5-0.5\times6.5\times1)$ $(=39)$			M1	
	$2\times"19.5"\div12$ $(=3.25)$ **or** "39" $\div12$ $(=3.25)$ **or** $12+12+12+12$ $(=48)$ **or** 4×12 $(=48)$			M1	**or** [their area] $\div12$ (dep on M1) **or** using multiples of 12 for [their area] eg area $=19.5$ **and** $12+12$ $(=24)$ **or** 2×12 $(=24)$
		4		A1	dep on M2, must be from correct working
					Total 4 marks

7	eg 8 × 12 (= 96) **or** 7 × 3 (= 21) **or** 3 × 15 (= 45) **or** 8 × 9 (= 72) **or** 15 × 12 (= 180) **or** 7 × 9 (= 63)		5	M1	for a method to find one relevant area
					accept 15 − 8 as 7 and 12 − 3 as 9
	eg "96" + "21" (= 117) **or** "45" + "72" (= 117) **or** "180" − "63" (= 117)			M1	for a complete method to find the total area
	eg 117 ÷ 7 (= 16.7... or 17)			M1	(indep) for a method to find the number of tins for their area ft from any value that has come from a calculation that includes at least 2 of the given dimensions
	eg "17" × 23.9			M1	for a method to calculate the cost for their number of tins dependent on previous M1
	Working required	406.3(0)		A1	dep on M1
					Total 5 marks