1		203	P1	translate into algebra for rectangle: $4x+4x+3x+4+3x+4$ $(=14x+8)$ or for trapezium: $5x+5x+x-3+7x-3$ $(=18x-6)$
			P1	equating: eg $18x-6=14x+8$ $(4x=14)$
			A1	solving for x: $x=14/4 = 3.5$ oe
			P1	process to find area: "3.5" × 3+4 (ft) or "3.5" × 4 ft
			A1	cao

2		$x^2 + 6x = 1$	M1	writes the area using algebraic terms e.g. $(x + 3) \times (x + 3)$ or at least two correct area expressions which may be written on the diagram or x given as $\sqrt{10} - 3$
			M1	expands and includes the given 10 e.g. $x^2 + 3x + 3x + 9 = 10$; condone one error in the four terms when expanding or $10 - 3\sqrt{10} - 3\sqrt{10} + 9 + 6\sqrt{10} - 18$ (=1) condone 1 error in the 6 terms
			A1	rearranges to give the given equation or shows surd expression simplifies to 1

3		Shows reasoning to reach $y=3$	M1	forms equation eg $2x + 6 = 5x - 9$	$48\div3$ (=16)	$3(2x + 6) = 48$ **or** $3(5x - 9) = 48$, condone missing bracket
			M1	isolates x and number terms $3x = 15$	forms equation $2x+6=$"16" **or** $5x - 9=$ "16"	Isolates x and number terms $6x =$ "30" **or** $15x =$ "75"
			M1	substitutes "5" into side length eg $2 \times 5 + 6$ (=16)	isolates x and number terms $2x=$ "10" **or** $5x =$ "25"	forms the second equation
			A1	$48\div16=3$ **or** $16\times3=48$	shows $x=5$ for both solutions	$x=5$ from 2 different equations.

4		$x > 2$	P1	for process to derive algebraic expressions for area of both rectangle and triangle eg $(x - 1)(3x - 2)$ and $(2x \times x) \div 2$ (condone missing brackets)
			M1	for method to rearrange inequality to $2x^2-5x+2> 0$ oe providing in the form $ax^2 + bx + c >0$
			M1	for a correct method to solve $2x^2-5x+2>0$
			M1	for establishing critical values 2 and $\frac{1}{2}$
			A1	$x > 2$

5	Triangle of area 18	M1	for a complete method to find area of trapezium eg $\frac{1}{2}(2 + 7) \times 4$ (= 18) **OR** for a triangle drawn of area 36 **OR** for a triangle that would give an area ft their area of trapezium	The value for the area of the trapezium must be clear for the ft to be checked.
		A1	for a triangle drawn of area 18 eg base = 6, height = 6 or base = 9, height = 4	Accept use of dimensions that are not whole numbers as long as the intention is clear

6	5	P1	for process to find the area of the triangle, eg. $0.5 \times (x + 4)(x - 2)$ oe OR for process to find the area of rectangle and 27.5×2, eg. $(x + 4)(x - 2)$ and 55	Trial and improvement methods must be fully correct identifying the value of x as 7 (3 marks) or the shortest side as 5 (4 marks)
		P1	(dep P1) for process to expand the brackets and derive a quadratic equation, eg. $x^2 + 4x - 2x - 8 = 55$ or $0.5(x^2 + 4x - 2x - 8) = 27.5$ oe	
		P1	(dep P2) for complete process to solve the quadratic equation $x^2 + 2x - 63 = 0$ eg $(x - 7)(x + 9)$ (= 0) or $\frac{-2\pm\sqrt{2^2-4\times1\times-63}}{2\times1}$ or $(x + 1)^2 - 1 - 63$ (= 0)	
		A1	cao SC: B1 for $x^2 + 4x - 2x - 8 = 27.5$	An answer of 5 with no supportive working gets no marks

7	17.6	P1	for correct trig statement, eg $\sin 30 = \frac{h}{6}$	
		P1	for complete process to find h, eg $6 \times \frac{1}{2}$ (= 3)	
		P1	for correct substitution into the area of a trapezium formula, eg $\frac{1}{2}(a+b)\times "3" = 66$ **or** $a+b=44$ **or** $\frac{1}{2}(2x+3x)\times h = 66$	
		P1	for complete correct process to find the length of AB, eg $\left[\frac{66\times 2}{3} \div (2+"3")\right] \times 2$	
		A1	cao	An answer of $\frac{88}{5}$ gets P4 A0