1	5	P1 P1 P1 A1	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 (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 (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 $(x+1)^2-1-63(=0)$ cao SC: B1 for $x^2+4x-2x-8 = 27.5$	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) An answer of 5 with no supportive working gets no marks

2	0.5	P1 P1 P1 P1 A1	derive an algebraic expression for the area of A eg $\frac{1}{8}\pi[(5x-1)^2-(3x-1)^2]$ expand and simplify for either area A or area B eg $\frac{1}{8}\pi(16x^2-4x)$ **or** $\pi(x^2-2x+1)$ (dep P2) equate and rearrange into a quadratic eqn of the form $ax^2+bx+c=0$ eg $2x^2+3x-2=0$ (dep P3) factorise eg $(2x-1)(x+2)=0$ **or** use of formula eg $\frac{-3\pm\sqrt{3^2-4\times2\times-2}}{2\times2}$ oe	 Accept only the single value of 0.5 oe but award 0 marks for a correct answer with no supportive working

3	8 and –3	M1 M1 A1	for rearranging to get $x^2-5x-24(=0)$ **or** $-x^2+5x+24(=0)$ for $(x\pm8)(x\pm3)$ **or** $(x+a)(x+b)$ where $ab=-24$ or $a+b=-5$ **or** substitution into formula, condoning one sign error eg $(x=)\frac{--5\pm\sqrt{(-5)^2-4\times1\times-24}}{2\times1}$ for 8 **and** –3	Can be implied by $(x-8)(x+3)$ or $(-x+8)(x+3)$