Question	Answer	Marks	Guidance
1	$9kx+1=kx^2+3(2k+1)x+4$, leading to $kx^2+x(3-3k)+3 \quad [=0]$	**M1**	For equating the two equations and attempt to obtain a 3 term quadratic equation equated to zero.
	$(3-3k)^2-(4\times 3k)$ oe	**M1**	**Dep** on previous M mark for attempt to use the discriminant in any form
	$3k^2-10k+3$ oe	**M1**	**Dep** on previous M mark for simplification to a 3 term quadratic expression in terms of k
	Critical values 3 and $\frac{1}{3}$	**A1**	For both
	$\frac{1}{3}<k<3$	**A1**	Mark the final answer
2	$x=\frac{-(2\sqrt{3}+5)\pm\sqrt{(2\sqrt{3}+5)^2-4(3-5\sqrt{3})(-1)}}{2(3-5\sqrt{3})}$	**M1**	For the use of the quadratic formula
	$x=\frac{-(2\sqrt{3}+5)\pm\sqrt{12+20\sqrt{3}+25+12-20\sqrt{3}}}{2(3-5\sqrt{3})}$	**M1**	For expansion of the square root, must see at least 4 terms
	$x=\frac{-12-2\sqrt{3}}{2(3-5\sqrt{3})}$ oe, $x=\frac{2-2\sqrt{3}}{2(3-5\sqrt{3})}$ oe	**A1**	For both
	$x=\frac{-12-2\sqrt{3}}{2(3-5\sqrt{3})}\times\frac{3+5\sqrt{3}}{3+5\sqrt{3}}$ oe or $x=\frac{2-2\sqrt{3}}{2(3-5\sqrt{3})}\times\frac{3+5\sqrt{3}}{3+5\sqrt{3}}$ oe with an attempt to simplify	**M1**	For attempt to rationalise at least one of *their* solutions (must be similar structure) Sufficient detail must be seen, at least 3 terms in the numerator
	$\frac{1}{2}+\frac{\sqrt{3}}{2}$	**A1**	Must have sufficient detail shown
	$\frac{2}{11}-\frac{\sqrt{3}}{33}$	**A1**	Must have sufficient detail shown