Question	Scheme	Marks	AOs
5	$2x-y+6=0$ and $y=2x^2+kx+9$		
	Rearranges to $y=2x+6$ and substitutes into $y=2x^2+kx+9$ $2x+6=2x^2+kx+9$	M1	1.1b
	$2x^2+(k-2)x+3=0$	A1	1.1b
	Uses the discriminant $(k-2)^2-4(2)(3)>0$ proceeding to $k\ldots$	dM1	2.1
	$k\ldots 2-2\sqrt{6}$ or $k\ldots 2+2\sqrt{6}$	A1	1.1b
	$\{k:k<2-2\sqrt{6}\}\cup\{k:k>2+2\sqrt{6}\}$	A1	2.5
		(5)	
			(5 marks)

Notes:

M1: For an attempt to rearrange the linear equation to make y the subject and substitute into the quadratic equation.

A1: For a correct 3TQ with like terms collected, set $=0$.

May be implied by correct use of the discriminant with $a=2,\ b=(k-2),\ c=3$.

dM1: For the key step in using the discriminant with their *a*, *b* and *c* which must include k, proceeding to at least one critical value for k

A1: One correct critical value. Allow any inequality/equality here. Condone $\sqrt{24}$ for $2\sqrt{6}$

A1: $\{k:k<2-2\sqrt{6}\}\cup\{k:k>2+2\sqrt{6}\}$ cso. Set notation required. Condone $\sqrt{24}$ for $2\sqrt{6}$.

Alternative

M1: For an attempt to rearrange the linear equation to make x the subject and substitute into the quadratic equation for both instances of x.

A1: For a correct 3TQ with like terms collected, i.e., $y^2+(k-14)y+(54-6k)=0$.

May be implied by correct use of the discriminant with $a=1,\ b=(k-14),\ c=(54-6k)$.

dM1A1A1: As in the main scheme.