Question	Scheme	Marks	AOs
4 (a)	Deduces that gradient of l_2 is $-\frac{1}{2}$	B1	2.2a
	Finding the equation of a line with gradient "$-\frac{1}{2}$" and point $(-2,3)$ $y-3=-\frac{1}{2}(x+2)$	M1	1.1b
	$y=-\frac{1}{2}x+2$	A1	1.1b
		(3)	
(b)	A point on l_1 is of the form $(x,2x-1)$	B1	2.2a
	Uses the distance from $(x,2x-1)$ to $(-2,3)$ is $2\sqrt{13}$ $(x+2)^2+(2x-4)^2=(2\sqrt{13})^2=52$	M1 A1	3.1a 1.1b
	$x^2+4x+4+4x^2-16x+16=52 \Rightarrow 5x^2-12x-32=0$ *	A1*	2.1
		(4)	
(c)	$5x^2-12x-32=0 \Rightarrow (5x+8)(x-4)=0$	M1	1.1b
	$x=-\frac{8}{5},4$	A1	1.1b
	Substitutes $x=-\frac{8}{5}$ into $y=2x-1$	M1	2.2a
	$B=\left(-\frac{8}{5},-\frac{21}{5}\right)$	A1	1.1b
		(4)	
			(11 marks)

Notes:

(a)

B1: Uses the perpendicular rule to deduce that gradient of l_2 is $-\frac{1}{2}$

M1: Uses a changed gradient and $(-2,3)$ to find the equation of l_2. Look for $y-3=$"$-\frac{1}{2}$"$(x+2)$

A1: $y=-\frac{1}{2}x+2$

(b)

B1: For deducing that *B* and *C* are of the form $(x,2x-1)$. Scored when *y* is replaced by $(2x-1)$ when a simultaneous method is used.

M1: For using Pythagoras' theorem to set up an equation in *x*.

A1: For a correct unsimplified equation in *x*. $(x+2)^2+(2x-4)^2=52$

A1*: For correct algebra and working leading to the given answer $5x^2-12x-32=0$

(c)

M1: For a valid attempt to solve the given quadratic equation

A1: $x=-\frac{8}{5},4$ (You may ignore any reference to the 4)

M1: Substitutes their $x=-\frac{8}{5}$ into $y=2x-1$ and finds *y*

A1: $B=\left(-\frac{8}{5},-\frac{21}{5}\right)$