Question	Scheme	Marks	AOs
1 (a)	$$\left\{\frac{\mathrm{d}y}{\mathrm{d}x}=\right\}2x^2-7x-4$$	M1 A1	1.1b 1.1b
		(2)	
(b)	Attempts to solve $\left\{\dfrac{\mathrm{d}y}{\mathrm{d}x}=\right\}2x^2-7x-4\ldots0$ e.g., $(2x+1)(x-4)=0$ leading to $x=\ldots$ and $x=\ldots$	M1	1.1b
	Correct critical values $x=-\dfrac{1}{2},4$	A1	1.1b
	Chooses inside region for their critical values	dM1	1.1b
	Accept either $-\dfrac{1}{2}<x<4$ **or** $-\dfrac{1}{2}\,,,\,x\,,,\,4$	A1	1.1b
		(4)	
		(6 marks)	

Notes:

(a)

M1: Decreases the power of x by one for at least one of their terms. Look for $x^n\to\ldots x^{n-1}$

Allow for $5\to0$

A1: $\left\{\dfrac{\mathrm{d}y}{\mathrm{d}x}=\right\}2x^2-7x-4$

(b)

M1: Sets their $\dfrac{\mathrm{d}y}{\mathrm{d}x}\ldots0$ where … may be an equality or an inequality and proceeds to find two

values for x from a 3TQ using the usual rules. This may be implied by their critical values.

A1: Correct critical values $x\ldots-\dfrac{1}{2},4$

These may come directly from a calculator and might only be seen on a sketch.

dM1: Chooses the inside region for their critical values.

A1: Accept either $-\dfrac{1}{2}<x<4$ **or** $-\dfrac{1}{2}\,,,\,x\,,,\,4$ but not, e.g., $-\dfrac{1}{2}<x\,,,\,4$

Condone, e.g., $x>-\dfrac{1}{2},\ x<4$ **or** $x>-\dfrac{1}{2}$ and $x<4$ **or** $\left\{x:x>-\dfrac{1}{2}\right\}\cap\{x:x<4\}$

or $x\in\left(-\dfrac{1}{2},4\right)$ **or** $x\in\left[-\dfrac{1}{2},4\right]$

Note: You may see $x<-\dfrac{1}{2},x<4$ in their initial work before $-\dfrac{1}{2}<x<4$. Condone this so long as

it is clear that the $-\dfrac{1}{2}<x<4$ is their final answer.