NB: method must be seen for the dM mark, if critical values appear from a derivative statement with no method shown (by calculator) then it is dM0. The discriminant must be considered. But the last mark is not dependent, so may be scored for selecting the correct "outside" region for their cvs.

Question Number	Scheme	Marks
8(a)	$25 = a + -(5\times -2+b)\ (\Rightarrow 25 = a+10-b) \Rightarrow a = 15+b$ *	M1A1*
		(2)
(b)	$9 = a+10+b \Rightarrow a = \ldots$ or $b = \ldots.$ $a = 7,\ b = -8$	M1 A1A1
		(3)
(c)	$\left(\frac{8}{5}, 7\right)$	B1ftB1
		(2)
(d)	$15-5x = -2x^3+5x^2+4x-3 \Rightarrow 2x^3-5x^2-9x+18=0$ $2x^3-5x^2-9x+18 = (x+2)(2x^2-9x+9)$ $2x^2-9x+9=0 \Rightarrow x = \frac{3}{2}$ (ignore $x=3$) $\left(\frac{3}{2}, \frac{15}{2}\right)$	M1 dM1A1 ddM1 M1A1
		(6)
		(13 marks)

(a)

M1: Substitutes $(-2,\ 25)$ into $y = a-(5x+b)$. You must **either** see a correct unsimplified equation without the modulus before the answer **or** indication of correct branch with attempt to substitute.
Note they may use the cubic and substitute $x = -2$ to achieve the 25.
For methods via squaring send to review if you are unsure if the marks are deserved.

A1*: Achieves the given answer with no errors seen following a correct unsimplified equation.
If they attempt both equations, they must clearly indicate the choice of solution.

(b)

M1: Substitutes $(2,\ 9)$ into $y = a+(5x+b)$ and solves simultaneously with the equation from (a) to find a value for *a* or a value for *b*. May be implied by a correct value for *a* or *b*.

A1: One of $a = 7,\ b = -8$

A1: Both $a = 7,\ b = -8$ only