Question Number	Scheme	Marks
5	$x = -2,\ 3$	B1
	$\dfrac{x+1}{(x-3)(x+2)} = 1 - \dfrac{2}{x-3} \Rightarrow x+1 = x^2 - x - 6 - 2(x+2) \Rightarrow x^2 - 4x - 11 = 0$ **or** $\dfrac{x+1}{(x-3)(x+2)} - 1 + \dfrac{2}{x-3} \leqslant 0 \Rightarrow \dfrac{4x - x^2 + 11}{(x-3)(x+2)} = 0$ **or** $(x+1)(x-3)(x+2) \leqslant (x-3)^2(x+2)^2 - 2(x-3)(x+2)^2$ $\Rightarrow (x-3)(x+2)\left[4x - x^2 + 11\right] = 0$	M1
	$x^2 - 4x - 11 = 0 \Rightarrow x = \dfrac{4 \pm \sqrt{16+44}}{2} = \ldots$	M1
	$x = 2 \pm \sqrt{15}$	A1
	$x < -2,\ 2 - \sqrt{15} \leqslant x < 3,\ x \geqslant 2 + \sqrt{15}$	M1A1
		(6)
		Total 6

Notes:

B1: The cv's –2 and 3 stated or used. May be seen on a diagram.

M1: Any complete **algebraic** method to reach at least a expanded **quadratic** for the other two critical values. E.g. equates sides, multiplies through and simplifies, or collects to one side and finds common denominator or multiplies through by a positive expression and collects to one side etc. Do not be concerned about inaccuracies in the inequalities in intermediate steps – score for the overall method leading to a suitable equation being found.

M1: Correct method (usual rules) to solve the resulting **three term quadratic** equation for the remaining cv's. Once a quadratic is reached accept if correct solutions for their quadratic appear without working.

A1: For the cv's $2 \pm \sqrt{15}$ Must be exact.

M1: Uses their cv's form the correct shape for the solution, $x < \alpha$, $b \leqslant x < \gamma$, $x \geqslant \delta$ allowing for the inequalities to be loose or strict in each case. Number lines, sign tables or graph may be used, or this may be deduced from inequalities work throughout the question.

A1: Fully correct and no extra other region. Must be exact values. Accept interval notation, e.g $(-\infty, -2) \cup \left[2 - \sqrt{15}, 3\right) \cup \left[2 + \sqrt{15}, \infty\right)$. Note if set notation is used the "union" symbol must be correct, but in language accept "and" or "or".

Note: Solutions that expand to a quartic and then state the four CVs with no algebraic method shown to solve the quartic score at most SC B1M0M0A0M1A1.