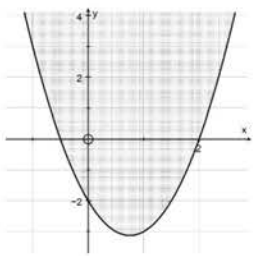
Question			Answer	Marks	AOs	Guidance	
8	(a)		**DR** $\frac{dy}{dx} = 4x - 3 = 0$ at a stationary point $x = 0.75$ When $x = 0.75$, $y = 2\times0.75^2 - 3\times0.75 - 2 = -3.125$ So stationary point at (0.75, –3.125)	**M1** **A1** **A1** **[3]**	**1.1** **1.1** **1.1**	Attempt to differentiate and equate to zero cao any form cao	Differentiation must be used $\left(\frac{3}{4}, -\frac{25}{8}\right)$
8	(b)		**DR** $\frac{d^2y}{dx^2} = 4 > 0$ so minimum point	**M1** **E1** **[2]**	**1.1** **2.2a**	Finding the second derivative FT their derivative Clear conclusion from consideration of the sign of the second derivative	Do not allow from an argument based on the coefficient of x^2
8	(c)		**DR**  Min point at (0.75, –3.125) (0, –2) is on the curve $y \geq 2x^2 - 3x - 2$ is the shaded region above the curve including the boundary	**M1** **A1** **A1** **[3]**	**1.1a** **1.1a** **1.1b**	Attempt to sketch a parabola using their labelled minimum point Parabola with their minimum point and one other correct point clearly shown Area above their curve indicated and the boundary clearly included	Also allow M1 for attempt to sketch parabola using the intersection with at least one axis A1 parabola through 3 correct points eg (–0.5, 0), (2. 0) and (0, –2). Other points include (–2, 12), (–1, 3) (1, –3) (3, 7)
8	(d)		**DR** $(2x+1)(x-2) > 0$ boundary values $x = -\frac{1}{2}$ and 2 $\left\{x : x < -\frac{1}{2}\right\} \cup \left\{x : x > 2\right\}$	**M1** **A1** **A1** **A1** **[4]**	**1.1a** **1.1a** **1.1a** **2.5**	Factorising the quadratic expression or attempting to solve $2x^2 - 3x - 2 = 0$ Correct roots of the quadratic equation soi Indicates that the required sets are less than their lower root and more than their upper root Correct set notation must be used. FT their roots	Allow M1A1 for roots of quadratic equation BC Allow **M1A1A1A0** if solved BC without set notation seen