Question	Answer	Marks	Guidance
7(a)	$2x^2 - x(3x-2) + (3x-2)^2 = 2$ or $2\left(\frac{y+2}{3}\right)^2 - y\left(\frac{y+2}{3}\right) + y^2 = 2$	**M1**	For a quadratic equation in one variable
	$4x^2 - 5x + 1 = 0$ oe or $4y^2 + y - 5 = 0$ oe	**A1**	Allow multiples but must be a 3 term equation = 0
	$x = \frac{1}{4}$ $x = 1$ $y = -\frac{5}{4}$ $y = 1$	**2**	**A1** for each correct pair
	Midpoint: $\left(\frac{5}{8}, -\frac{1}{8}\right)$	**M1**	Allow for use of *their* coordinates
	Gradient of $AB = 3$	**M1**	**M1** for gradient of $AB = 3$ Allow for use of *their* coordinates
	Perpendicular gradient: $-\frac{1}{3}$	**M1**	**Dep** on previous **M** mark
	Perpendicular equation: $y + \frac{1}{8} = -\frac{1}{3}\left(x - \frac{5}{8}\right)$	**M1**	Allow for *their* perp gradient and *their* midpoint
	When $y = \frac{7}{8}$, $k = -\frac{19}{8}$ or -2.375 oe	**A1**	
7(b)	$\left(\frac{29}{8}, -\frac{9}{8}\right)$ or $(3.625, -1.125)$ oe	**2**	**B1** for each coordinate
8(a)	$\frac{\frac{1}{3}(6x)(3x^2-5)^{-\frac{2}{3}}(x+4) - (3x^2-5)^{\frac{1}{3}}}{(x+4)^2}$ or $\frac{1}{3}(6x)(3x^2-5)^{-\frac{2}{3}}(x+4)^{-1} + (3x^2-5)^{\frac{1}{3}}\left(-(x+4)^{-2}\right)$	**3**	**B1** for $\frac{1}{3}(6x)(3x^2-5)^{-\frac{2}{3}}$ soi **M1** for attempt at differentiation of a quotient or valid product **A1** for all other terms correct
	$\left(2x(x+4) - (3x^2-5)\right)$	**M1**	**M1 dep** on previous **M** mark for simplification of *their* numerator Allow one sign slip but must be dealing with two quadratic terms.
	$\frac{-x^2+8x+5}{(3x^2-5)^{\frac{2}{3}}(x+4)^2}$	**A1**	

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