Question	Answer	Marks	Guidance
9	$\frac{8}{2x+1} = 6x+1$ $12x^2 + 8x - 7 = 0$	**M1**	Attempt to obtain a 3-term quadratic in one variable equated to zero.
	$x = \frac{1}{2}$	**2**	**M1 dep** for solution, see guidance
	$k\ln(2x+1)$	**M1**	
	Area under curve = $\left[k\ln(2x+1)\right]_0^{their\frac{1}{2}}$ = $k\ln(2(their\ x)+1)\ (-0)$	**M1**	**Dep** on previous **M1** for correct application of limits using *their x*, *k* and zero Allow unsimplified
	Area under curve = 2ln 2	**A1**	Not from incorrect work
	Area under straight line = $\frac{5}{8}$ or 0.625 oe	**B1**	
	Shaded area = ln4 – $\frac{5}{8}$	**A1**	Not from incorrect work

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Question	Answer	Marks	Guidance
9	**Alternative**		
	Either $\frac{8}{2x+1}=6x+1$ $12x^2+8x-7=0$	**(M1)**	Attempt to obtain a 3-term quadratic in one variable equated to zero.
	$x=\frac{1}{2}$	**(2)**	**M1 dep** for solution, see guidance
	$y = 2$	**(A1)**	Award only if attempt at integration with respect to y is subsequently seen
	Or $x=\frac{2}{y}-\frac{1}{2}$ and $x=\frac{2y-1}{6}$ oe	**(M1)**	For rearranging both equations to obtain x or 2x in terms of y
	$2y^2 + 2y – 12 = 0$	**(M1)**	**Dep** for attempt to obtain a 3-term quadratic in one variable equated to zero.
	$y = 2$	**(2)**	**M1 dep** for solution, see guidance
	Then area enclosed between curve, y-axis and the line $y = 2 = \left[k\ln y-\frac{1}{2}y\right]_{their\ 2}^{4}$ $=k\ln 4-2-k\ln 2+1$	**(M1)**	For correct application of limits using *their y = 2*, k and 4 Allow unsimplified
	2ln2 – 1	**(A1)**	Not from incorrect work
	Area enclosed by straight line, the y axis and the line $y = 2$ **,** $=\frac{3}{8}$	**(B1)**	
	Shaded area = ln4 – $\frac{5}{8}$	**(A1)**	Not from incorrect work
10(a)	$\frac{30}{2}(4\tan 2x+(29\times 3\tan 2x))=455\sqrt{3}$	**M1**	For attempt to use sum formula with correct a and d
	$\tan 2x=\frac{\sqrt{3}}{3},\frac{455\sqrt{3}}{1365}$	**A1**	
	x = –165°, – 75°, 15°, 105°	**3**	**M1** for 1 correct solution (allow if in radians or from use of tan 2x = 0.577 or tan 2x = 0.58 e.g. 14.99°, 15.06°.) **A1** for a second correct solution **A1** for 2 further correct solutions and no extras in the range

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