Question	Answer	Marks	Partial Marks
6	$\frac{\mathrm{d}}{\mathrm{d}x}(\sin^2 x) = 2\sin x\cos x$ soi	**B1**	
	$\cos x \times \textit{their}(2\sin x\cos x) +$ $(\textit{their} - \sin x) \times \sin^2 x$	**M1**	**FT** *their* $\frac{\mathrm{d}}{\mathrm{d}x}(\sin^2 x)$
	$\cos x \times \textit{their}(2\sin x\cos x) + (-\sin x) \times \sin^2 x$ isw	**A1**	**FT** *their* $\frac{\mathrm{d}}{\mathrm{d}x}(\sin^2 x)$
	$\frac{\delta y}{h} = \textit{their}(2\sin 3\cos^2 3 - \sin^3 3)$ or better	**M1**	**FT** *their* derivative
	0.274h or 0.2738[08...]h where the coefficient of h is rot to 4 or more sf	**A1**	**dep** on correct derivative seen
7	$\frac{\mathrm{d}y}{\mathrm{d}x} = 2mx + \frac{1}{2}$	**B1**	
	$\frac{\mathrm{d}^2 y}{\mathrm{d}x^2} = 2m$	**B1**	
	$m = \frac{1}{4}$ and $n = -\frac{5}{4}$ and no other values	**2**	**M1** for $3(2m) = \left(2mx + \frac{1}{2}\right)^2 - \left(mx^2 + \frac{x}{2} + n\right)$ soi

Question	Answer	Marks	Partial Marks
8(a)	$S_{30} = \frac{30}{2}\{2a + 29d\} = -1065$	**B1**	
	$S_{50} - S_{30} =$ $\frac{50}{2}\{2a + 49d\} - \left(\frac{30}{2}\{2a + 29d\}\right) = -2210$ or $S_{50} = \frac{50}{2}\{2a + 49d\} = -2210 - 1065$	**B1**	
	Solves *their* linear equations in a and d as far as a = .. or d = … Some correct pairs are e.g. $150a + 2175d = -5325$ $150a + 3675d = -9825$ or $30a + 435d = -1065$ $50a + 1225d = -3275$ or $2a + 49d = -131$ $2a + 29d = -71$	**M1**	**dep** on an attempt to form *their* equations using at least one sum formula
	$a = 8$, $d = -3$	**A2**	**A1** for each
8(b)	$4 + 4r + 4r^2 = 7$ or $\frac{4(1-r^3)}{1-r} = 7$ oe	**B1**	
	$4r^2 + 4r - 3[= 0]$ oe	**B1**	
	Solves or factorises *their* 3-term quadratic oe e.g. $(2r - 1)(2r + 3)$ [= 0]	**M1**	
	$r = 0.5$, -1.5	**A1**	
	$\left[\frac{4}{1-0.5} =\right]$ 8 only, nfww	**A1**	
9(a)	Valid explanation: Range of g is g > 0 oe	**B1**	
9(b)	$\frac{1}{\left(\frac{3x^2}{4x-1}\right)^2}$	**M1**	
	$\frac{(4x-1)^2}{9x^4}$ or simplified equivalent, isw	**A1**	