6	**(a)**	**(i)**	5460 (3 sf)	**B1** **[1]**	**1.1**	
6	**(a)**	**(ii)**	$9000 = 100e^t$ $t = \ln 90$ $= 4.50$ (3 sf) Allow 4.5 ISW	 **M1** **A1** **[2]**	 **3.1a** **1.1**	 May be implied by answer Ignore units. Decimal answer needed
6	**(b)**	**(i)**	$\log_{10} P = \log_{10}(ka^t)$ $\log_{10} P = \log_{10} k + \log_{10}(a^t)$ $\log_{10} P = \log_{10} k + t\log_{10} a$	 **M1** **A1** **[2]**	 **1.1** **1.1**	No marks yet At least two terms correct, may be implied by next line All correct, in this form
6	**(b)**	**(ii)**	Points plotted correctly ±0.1 Line of best fit drawn, between (1, 2.0) and (1, 2.4) and between (5, 4.2) and (5, 4.5)	**B1** **B1f** **[2]**	**1.1** **1.1**	NB. May be implied by correct line of best fit ft reasonable line through their points

Question			Answer	Marks	AO	Guidance
6	(b)	(iii)	Read off c and attempt 10^c . May be implied by value of k k = 19.9 to 63.1	M1 A1	3.1a 2.1	ft their line. Probably c = 1.3 to 1.8, $k = 10^{1.3}$ to $10^{1.8}$
			Attempt gradient of their graph AND correct ft equation in a. May be implied by value of a	M1	1.1	ft their line. Probably m = 0.5 to 0.7 AND $\log_{10}a$ = 0.5 to 0.7 OR $a = 10^{0.5}$ to $10^{0.7}$ scores
			a = 3.16 to 5.01 (3 sf)	A1	1.1	NB Use of two points and simultaneous equations: no marks unless the two points used are on their line of best fit. If first method used for k or a and then one point substituted in equation to find the other letter, no marks for second letter unless point used is on line of best fit.
				[4]		