Q	Marking instructions	AO	Marks	Typical solution
8(a)(i)	Obtains $12 = a + b\log_{10} 24$ ISW	3.4	B1	$12 = a + b\log_{10} 24$
	Subtotal		**1**	

Q	Marking instructions	AO	Marks	Typical solution
8(a)(ii)	Eliminates a to obtain an equation in b	3.1a	M1	$12 = a + b\log_{10} 24$ $-(6.4 = a + b\log_{10} 3)$ $5.6 = b\log_{10} 24 - b\log_{10} 3$ $= b\log_{10} \frac{24}{3}$ $= b\log_{10} 8$ $b = \frac{5.6}{\log_{10} 8}$
	Obtains $b\log_{10} h$ from $b\log_{10}$ their $24 - b\log_{10} 3$ or $b\log_{10} \frac{\text{their } 24}{3}$ where $3h$ = their 24	1.1a	M1	
	Completes a reasoned argument to show $b = \frac{5.6}{\log_{10} 8}$ Must include $\log_{10} \frac{24}{3}$ OE or $\log_{10} 24 = \log_{10} 8 \times 3$ AG	2.1	R1	
	Subtotal		**3**	

Q	Marking instructions	AO	Marks	Typical solution
8(a)(iii)	Obtains AWRT 3.44	1.1b	B1	$a = 3.44$
	Subtotal		**1**	

Q	Marking instructions	AO	Marks	Typical solution
8(b)	Substitutes a value for $0 < x \leq 0.25$ into the model with their a and b = AWRT 6.2 PI by correct negative y-value Or Substitutes x = 0 into the model with their a and b = AWRT 6.2 **and** states that the value for y is undefined Or Substitutes y = 0 into the correct model with and gets x = AWRT 0.28	3.4	M1	When $x = 0.25$ $y = 3.44 + 6.2\log_{10} 0.25$ $= -0.29$ The model predicts a negative median mass for a monkey that is one week old, therefore it is unsuitable for use with monkeys 1 week old or less.
	Completes reasoned argument to find a correct median mass for their value of x **and** concludes that the model cannot be used to predict the median mass of monkeys less than one week old. Condone that the model cannot be used to predict the median mass of monkeys for their value of x where $0 < x \leq 0.25$ Condone omittance of median or use of weight throughout	3.5a	R1	
	Subtotal		**2**	

	Question 8 Total		**7**	