Q	Marking instructions	AO	Mark	Typical solution
6	Takes logs of both sides and uses a log rule correctly	1.1a	M1	$ln\,5^x = ln\,3^{x+4}$ $x\,ln\,5 = (x+4)\,ln\,3$ $x\,ln\,5 - x\,ln\,3 = 4\,ln\,3$ $x(ln\,5 - ln\,3) = ln\,81$ $x = \frac{ln\,81}{ln\,5 - ln\,3}$
	Applies all necessary log rules correctly so that x is no longer an exponent and expresses $4\,ln\,3$ in terms of x Condone sign error	1.1a	M1	
	Obtains $ln\,81$ from $4\,ln\,3$ or from $3^x \times 3^4$	1.1b	B1	
	Completes reasoned argument to show given result Must see $x(ln\,5 - ln\,3)$ on the penultimate line If natural logs are not used throughout then the base must be converted at the end to get this mark	2.1	R1	
	Total		**4**	