

Q	Marking instructions	AO	Marks	Typical solution
6	Uses power log rule correctly Or Raises 10 to the power of both sides and correctly obtains $10^{\log_{10} x^2}$ or x^2 PI by correct quadratic	1.1b	B1	$2\log_{10} x = \log_{10} 4 + \log_{10} (x+8)$ $\log_{10} x^2 = \log_{10} 4(x+8)$ $x^2 = 4x + 32$ $x^2 - 4x - 32 = 0$
	Uses addition or subtraction log rule correctly. Or Correctly combines two indices. PI by correct quadratic.	1.1b	B1	$x = -4 \text{ or } 8$ <p>-4 is not a solution as $\log_{10} -4$ has no real value. Therefore, the equation has exactly one solution.</p>
	Solves a three-term quadratic equation obtaining at least one real value for x	1.1a	M1	
	Obtains $x = 8$ Must have scored B1,B1,M1.	1.1b	A1	
	Obtains correct values of x and explains why -4 is not a solution. Must refer to the log of a negative or state it is only possible to find the log of a positive. Accept correct reference to the domain of a log function. Must have achieved B1,B1,M1,A1	2.4	E1	
Question 6 Total			5	