

Question 9 (Total 5 marks)

Part	Working or answer an examiner might expect to see	Mark	Notes
(a)	$\log p = \log q(p - q)$	B1	This mark is given for restating the log equation using $\log q(p - q)$ or equivalent
	$p = q(p - q)$ $p = pq - q^2$ $pq - p = q^2$	M1	This mark is given for rearranging so that terms in a are on one side of the equation
	$p(q - 1) = q^2$ $p = \frac{q^2}{(q - 1)}$	A1	This mark is for rearranging to show the result required
(b)	$q \neq 1$	B1	This mark is given for deducing that $q \neq 1$
	Since $p > 0$, $\frac{q^2}{(q - 1)} > 0$ $q > 1$ since q^2 is positive	B1	This mark is given for stating that $q > 1$ and explaining the reason for the restriction