9. Given that $p > q > 0$ and that p and q satisfy the equation

$$\log p = \log q + \log(p - q)$$

(*a*) show that

$$p = \frac{q^2}{q - 1}$$

(3)

(*b*) Write down the full restriction on the value of q, explaining the reason for this restriction.

(2)

(Total for Question 9 is 5 marks)