9 (a) Three consecutive terms in an arithmetic sequence are $3e^{-p}, 5, 3e^{p}$

Find the possible values of p. Give your answers in an exact form.

[6 marks]

9 (b) Prove that there is no possible value of q for which $3e^{-q}$, 5, $3e^{q}$ are consecutive terms of a geometric sequence.

[4 marks]