8 **(a)** A geometric progression has a second term of 12 and a sum to infinity of 54. Find the possible values of the first term of the progression. [4]

(b) The nth term of a progression is $p + qn$, where p and q are constants, and S_n is the sum of the first n terms.

(i) Find an expression, in terms of p, q and n, for S_n. [3]

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(ii) Given that $S_4 = 40$ and $S_6 = 72$, find the values of p and q. [2]

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