10 An arithmetic progression, A, has first term a and common difference d.
The 2nd, 14th and 17th terms of A form the first three terms of a convergent geometric progression, G, with common ratio r.

(a) (i) Given that $d \neq 0$, find two expressions for r in terms of a and d and hence show that $a = -17d$. [6]

(ii) Find the value of r. [2]

(b) The first term of the geometric progression, G, is q and the sum to infinity is $\frac{256}{3}$.

Find the sum of the first 20 terms of the **arithmetic** progression, A. [7]

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