

7 An arithmetic progression has first term a and common difference d , where a and d are non-zero. The first, third and fourth terms of the arithmetic progression are consecutive terms of a geometric progression with common ratio r .

(a) (i) Show that $r = \frac{a+2d}{a}$. **[1]**

(ii) Find d in terms of a . **[2]**

(b) Find the common ratio of the geometric progression. **[2]**