10 (a) In an arithmetic progression, the first term is a and the common difference is d. The sum of the first three terms of this arithmetic progression is 42. The product of the first three terms of this arithmetic progression is -6720.

(i) Show that $a(a+2d) = -480$. [3]

(ii) Hence, given that a is positive, find the values of a and d. [4]

(b) In a geometric progression, the 3rd term is $\frac{e^{4x}}{4}$ and the 10th term is $\frac{e^{11x}}{512}$. Find the first term and the common ratio. [5]