**7** The first and second terms of an arithmetic progression are $\frac{1}{\cos^2\theta}$ and $-\frac{\tan^2\theta}{\cos^2\theta}$, respectively, where $0 < \theta < \frac{1}{2}\pi$.

**(a)** Show that the common difference is $-\frac{1}{\cos^4\theta}$. [4]

**(b)** Find the exact value of the 13th term when $\theta = \frac{1}{6}\pi$. [3]