$q\sqrt{7}$, then there exists a matrix $\begin{pmatrix} a & b \\ c & d \end{pmatrix} \neq \pm \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$

Prove that if p and q are rational numbers and r = p +

$$q\sqrt{t}$$
, then there exists a matrix $\begin{pmatrix} c & d \end{pmatrix} \neq \pm \begin{pmatrix} 0 & 1 \end{pmatrix}$ with integer entries and with $ad - bc = 1$ such that

 $\frac{ar+b}{cr+d}=r.$