**6E Inverse of 3×3 Matrices**

1. Given that the Matrix $A=$ $\left[\begin{matrix}1&3&1\\0&4&1\\2&-1&0\end{matrix}\right]$, find $A^{-1}$
2. The matrices $P$ and $Q$ are non-singular. Prove that $\left(PQ\right)^{-1}=Q^{-1}P^{-1}$.
3. The matrix $A=\left[\begin{matrix}-2&3&-3\\0&1&0\\1&-1&2\end{matrix}\right]$ and the matrix $B$ is such that $\left(AB\right)^{-1}=\left[\begin{matrix}8&-17&9\\-5&10&-6\\-3&5&-4\end{matrix}\right]$
4. Show that $A^{-1}=A$
5. Find $B^{-1}$