1. Suppose $A$, $B$ and $C$ are $3 \times 3$ matrices for which $|A| = 3$, $|B| = 5$ and $|2AB^{-1}C| = 6$. Find $|C|$.

2. Find the value(s) of $k$ for which the matrix
\[
\begin{bmatrix}
1 & 0 & 5 \\
2 & 2 & 0 \\
6 & 5 & k \\
\end{bmatrix}
\]
is not invertible.