The total number of Dirichlet's publications is not large: jewels are not weighed on a grocery scale.
Carl Friedrich Gauss (1777-1855)
German mathematician

1. (4 points) Find the determinant of $A=\left[\begin{array}{ll}3 & 2 \\ 4 & 5\end{array}\right]$. Is $A$ invertible? Why or why not.
2. (4 points) Find the determinant of $B=\left[\begin{array}{rrr}3 & 2 & 4 \\ 1 & 5 & 1 \\ 2 & -3 & 3\end{array}\right]$. Is $B$ invertible? Why or why not.
3. (4 points) Find the determinant of $C=\left[\begin{array}{rrrr}1 & 2 & 3 & 4 \\ 0 & 0 & 5 & 0 \\ 4 & 3 & 2 & 1 \\ 0 & 0 & 3 & -2\end{array}\right]$. Is $B$ invertible? Why or why not.
