Graphs and Algorithms

Edge Coloring I
Let $G$ be a $\Delta$-regular graph ($\Delta \geq 2$). Show that the edge-chromatic number of $G$ is $\chi'(G) = \Delta + 1$ if (i) $G$ has an odd number of vertices, (ii) $G$ has a bridge, or (iii) $G$ has an articulation vertex.

Edge Coloring II
Let $M$ be a maximal matching of a graph $G$. Show that there is a $(\Delta(G) + 1)$-edge coloring of $G$ which assigns the same color to every edge of $M$. 