Graph Theory: Lecture No. 16

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Let $G$ be a graph with maximum degree $\Delta$. Then $\Delta \leq \chi'(G) \leq \Delta + 1$. 
A graph drawn on the plane in such way that no two edges intersect other than at the end points is called a plane graph. Abstract graphs that can be drawn in this way are called planar.
Euler’s Formula: Let $G$ be a connected plane graph with $n$ vertices, $m$ edges and $\ell$ faces. Then $n - m + \ell = 2$. 
A plane graph with \( n \geq 3 \) vertices has at most \( 3n - 6 \) edges.
A planar graph is 6-colorable.