

## Genus, Skewness, Thickness and Coloring Theorems

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A conjecture by Albertson states that if  $\chi(G) \geq n$  then  $cr(G) \geq cr(K_n)$ , where  $\chi(G)$  is the chromatic number of  $G$  and  $cr(G)$  is the crossing number of  $G$ . This conjecture is true for  $n \leq 16$ , but it is still open for  $n \geq 17$ . In this paper we consider the statements corresponding to this conjecture where the crossing number of  $G$  is replaced with the genus  $\gamma(G)$  (the minimum genus of the orientable surface on which  $G$  is embeddable), the skewness  $\mu(G)$  (the minimum number of edges whose removal makes  $G$  planar), and the thickness  $\theta(G)$  (the minimum number of planar subgraphs of  $G$  whose union is  $G$ .)

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