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Problem 1. Let G be a graph with n vertices and m edges. Use an alteration trick to show that $\alpha(G) \geq \frac{n^2}{4m}$, assuming $m \geq n/2$.

N.b. This is worse than what we proved in Turán's theorem, but it is an arguably simpler proof.

Problem 2. Let G be a graph on n vertices. Prove that G if has $t \geq n/3$ many triangles, then G has an *induced* triangle-free subgraph on at least $Cn^{3/2}/\sqrt{t}$ many vertices for some constant $C > 0$.