

**1:** Find a nonhamiltonian graph  $G$  with 10 vertices such that  $G - v$  is hamiltonian for every vertex  $v$  of  $G$ .

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**2, Diestel 10.1:** Show that every tournament contains a (directed) Hamilton path.

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**3:** Let  $G$  have  $n > 1$  vertices and  $m$  edges. Prove that  $G$  has a bipartite subgraph with at least

$$\frac{2\lfloor n^2/4 \rfloor m}{n(n-1)}$$

edges. (You should consider a random bipartition... but don't allow just any bipartition.)

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**4, Diestel 11.6:**

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**5, Diestel 11.8:**

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**6, Diestel 11.10:**

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