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pigeonhole principle

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Author djao (24) Entry type Theorem Classification msc 03E05Classification msc 03B22Classification msc 03-01Classification msc 03-00Synonym box principle Synonym Dirichlet principle For any natural number n, there does not exist a bijection between n and a proper subset of n.

The name of the theorem is based upon the observation that pigeons will not occupy a pigeonhole that already contains a pigeon, so there is no way to fit n pigeons in fewer than n pigeonholes.