Three more graph theory problems

Math 40210, Fall 2012

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Three problems

1. **Given**: A collection of workers, a collection of jobs, knowledge of which workers can perform which jobs
   Task: Match up workers to jobs they can perform, *covering as many jobs as possible*
   Graph: vertices are workers and jobs, edges join workers to jobs that the worker can perform
2. **Given**: A chessboard and some dominoes
   Task: Cover the board with dominoes, each one covering two adjacent squares, *covering as many squares as possible*
   Graph: vertices are squares, edges join adjacent squares
3. **Given**: The twelve disciples, and knowledge of which pairs of disciples work well together
   Task: Send the disciples out in pairs, always utilizing pairs who work well together, *sending out as many pairs as possible*
   Graph: vertices are disciples, edges join pairs who work well together