

02/04/09

Math 412

HW3

Due February 11, 2009

Solve five of the next six problems.

1. # 1.3.15 in the book.
2. # 1.3.44 in the book.
3. Given a nonincreasing list \mathbf{d} of nonnegative integers, let \mathbf{d}' be obtained by deleting the entry d_k and subtracting 1 from the d_k largest elements remaining in the list. Prove that \mathbf{d} is graphic if and only if \mathbf{d}' is graphic. (Hint: Mimic the proof of the Havel–Hakimi Theorem.)
4. # 1.3.57 in the book.
5. Using directed graphs, find a cyclic arrangement of 32 binary digits such that the 32 strings of 5 consecutive digits are all distinct.
6. # 1.4.19 in the book.

Problems below review basic concepts and their ideas could be used in the tests.

WARMUP PROBLEMS: Section 1.3: # 1, 2, 4, 5, 8, 9, 12. Section 1.4: # 1, 3.
Do not write these up!

OTHER INTERESTING PROBLEMS: Section 1.3: # 18, 24, 26, 31, 41, 44, 63, 64. Section 1.4: # 26, 27, 28. Do not write these up!