

MA/CSSE 473 – Design and Analysis of Algorithms

Homework 15 (No problems to submit) **updated for Summer, 2017**

When a problem is given by number, it is from the textbook. 1.1.2 means “problem 2 from section 1.1” .

Problems for enlightenment/practice/review (not to turn in, but you should think about them):

- 11.1.2 (lower bound towers of Hanoi)
- 11.1.3 (trivial lower bounds)
- 11.1.6 (lower bound on sorting y exchanging adjacent elements)
- 11.1.11 (tight lower bound for closest numbers problem)
- 11.2.2 (median of 3 lower bound)
- 11.2.4 (best comparison-based sort for 4 elements)
- 11.2.9 (tournament tree)
- 11.2.11 [11.2.10] (jigsaw puzzle)
- 11.3.5 (polynomial-time 2-coloring algorithm)

Problems to write up and turn in: **(but you do not have to turn them in this term)**

1. (5) 11.3.6 (brute force composite number)
2. (5) 11.3.7a (polynomial –time check of knapsack solution)
3. (5) 11.3.11 [11.3.10] (Venn diagrams)
4. (10) 11.3.12 [11.3.11] (King Arthur problem) Optional, extra-credit problem

Questions and answers from Piazza:

HW15 Old Q5 What does “can win” mean?

When it says if that side can win, does it mean on the current turn/move by taking the King?
Or does it mean in some future move, potentially n moves?

Answer: It means "Is there some sequence of moves that will result in a win for this player?"