

## AMPL Problems for Homework 6

**Problem 5.** In studying an important scientific principle, you repeated an experiment  $n = 500$  times and got 500 estimates of an important fundamental constant  $x$ . The 500 estimates can be found in

<http://orfe.princeton.edu/~rvdb/307/homework/x.txt>

Write an AMPL model to compute the mean value of  $x$  by solving the following least-squares problem

$$\min_x \sum_{i=1}^n (x - b_i)^2$$

where the measured numbers are referred to as  $b_i$ 's.

**Problem 6.** Using the same data as in the previous problem, compute the median value of the  $b_i$ 's by re-expressing the least-absolute-deviations problem

$$\min_x \sum_{i=1}^n |x - b_i|$$

as a linear programming problem and using AMPL to solve the LP.