

# MATH 271 – Homework #4

due 19 February 2009

**All calculations must be done in Maple!**

1) For the following data, find the mean, median, standard deviation, and upper and lower quartiles. Draw a box plot and a histogram. Where do the quartiles and median lie in your box plot?

8, 7, 1, 4, 6, 6, 4, 5, 7, 6, 3, 0

2) For the following data points, find a linear and a quadratic least squares approximation to the data. plot your approximations as well as the points. Which approximation, in your opinion, does a better job of matching the data? Why does this make sense?

(1, 10), (3, 6), (5, 5), (7, 4), (9, 5)

3) Find the probabilities that  $x \leq 2$  for the following distributions:

- a) normal distribution, mean = 1.5, standard deviation = 0.9
- b) binomial distribution with probability of success 0.3 and with  $n = 25$
- c) Poisson distribution, with  $\mu = 2.5$