

# Project #2

Math 112-V

Due Tuesday, October 26, 2004

**Assignment:** You will collect historical data on Olympic track and field performance, and try to find a model that describes future performance.

**Goal:** You will learn to identify when scatter-plots represent a linear association, as well as when a statistical model becomes unrealistic.

**Steps:**

1. Go to <http://www.infoplease.com/almanacs.html>. Under the heading *Sports*, choose the *Olympics* link. Then choose the *Summer Olympics Through the Years* link. You will want to focus on a given event through the years, so choose the *Event-by-Event* link. We will focus on Track and Field, so choose the *Track & Field* link. Choose either of the links for *Men* or *Women*.
2. Try the following with several events until you find a strong linear association, with  $r^2 \geq 0.8$ . Import the data into *Fathom*, and construct a scatter-plot with the year along the horizontal axis and the time or distance along the vertical axis.  
*Important:* if your table includes footnotes, etc., then some of the scores will have letters next to them in the case table in *Fathom*. You will need to delete any such spurious letters before constructing the scatter-plot.
3. Construct a linear regression model and find the coefficient of determination.
4. Attach a print-out from *Fathom* to your report.
5. Your report should include an introduction to the project, a summary of the model, and an analysis of what happens in the long-term: does the shot-put go so far as to leave orbit? is the race run so fast that you finish before you begin?
6. Be sure to cite the web site as the source of your data.

*Each of your three projects should be word-processed.*