Matthew Oliver

Lab Report 1

Report Considerations:

Comment on how good you think the trend lines are for the derivatives data.

I think the trendline for the given positions is most likely accurate but the trendlines for both velocity and acceleration are most likely a little less accurate because of them being approximations. They don't seem to be too extreme however, so they could likely be used for predictions in the short-term, long-term predictions would become very far off, however.

Do you see more scatter in the data for the derivatives? Can you explain why?

There is far more scatter in the derivatives because of the nature of approximations. Approximating with so little data causes the values to "overcorrect," and be far more extreme than the unknown actual values. This isn't as apparent with velocity predictions, but acceleration is far more erratic. Further derivatives cause far more inaccuracy and "overcorrection." In short, velocity is an approximation, and acceleration is an approximation of an approximation, causing more inaccuracy.