

Worksheet #12 - Approximating Data

February 23, 2005

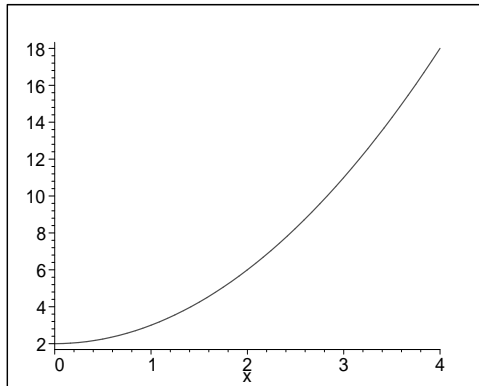


Figure 1: Graph of $y = x^2 + 2$

x	y	Your Guess	Error	Error-Squared
1				
2				
3				
4				
Total Error				
Average Error				

- Using the graph, fill in the y -column of the graph. Also plot the points on the graph.
- Approximate by drawing what you consider the “best” line that goes through your data and also goes through the origin. The equation of this line will be $y = Mx$. What is meant by “best”?
- Determine the slope of this line. Fill in the “Your Guess” portion of the chart.
- The error is determined by the difference between your guess and the actual y values. Error is like distance in the sense that we usually require it to be a positive number. So the next column in the chart is just the squares of the error.
- Now total the errors and compute the average error. Compare your results with your classmates and the instructor has computed.
- This is a sample of linear regression. In the future, we will expand the problem to approximate the data using a line of the form $y = Mx + B$.