MATH1201 – Sec 5.5 Worksheet Name:_____

You can work in groups of no more than two.

Due: Tuesday, February 23 at class time.

1. (Done in Class)

The data show the average monthly temperatures (over 29 years) for Deerwood, MN (My home town!)

a) Use your graphing calculator to draw a scatter plot of data from $x = 1$ through $x = 12$ where x represents the month.

b) Use the SINe REGression feature to find a sinusoidal function of the form $y = A\sin(Bx + C) + D$ that best fits the data.

c) Use your graphing utility to draw the sinusoidal function of best fit on the scatter plot.

x - Month	Average Monthly Temperature, °F
1 (Jan.)	8
2 (Feb.)	12
3 (March)	24
4 (April)	42
5 (May)	55
6 (June)	64
7 (July)	69
8 (Aug.)	68
9 (Sep.)	57
10 (Oct.)	46
11 (Nov.)	28
12 (Dec.)	15

Source: WeatherReports.com (http://www.weatherreports.com/56444) Click on More Averages to see the monthly averages.

2. (Done outside of class with a partner)

Repeat the directions in 1) using data found at **WeatherReports.com**. The data can involve the average monthly temperature of your hometown or any other city or region that interests you. (Except Washington DC…that information is in your textbook.)

3. Sketch a scatter plot of the data you found in 2.) by hand and come up with the parameter values for a model of the form: $y = A\cos(Bx + C) + D$ where A is a negative value. Use the methods described in the textbook to come up with the function.