Aim: How can we use technology to find a polynomial function to fit given data points in a contextual Situation? – Part 2 (Section 5-8)

DO NOW:

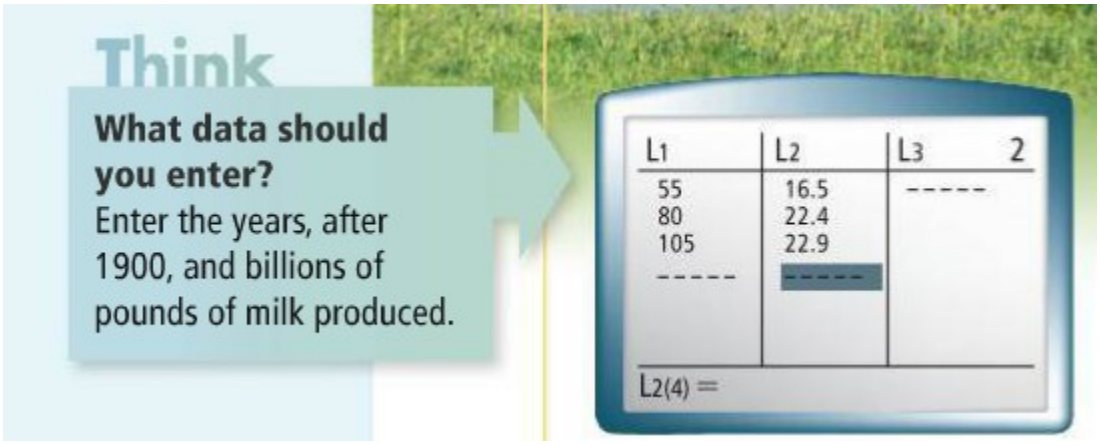
Determine which type of model best fits each set of points.

1. $(-2, -1)$, $(0, 3)$, and $(2, 7)$
2. $(0, 3)$, $(3, 4)$, and $(5, 6)$

I – Modeling the Data

1)

2) Use a linear Model



Student Version

3) Use the linear model. Estimate Wisconsin milk production in 1995.

II – Comparing the Models

1) Use a quadratic model for the previous exercise

2) How do they compare?

3) Which model is the best fit? Why?

4) If four data points were given, would a cubic function be the best model for the data? Explain your answer.

5) Using a model to predict a *y*-value "outside" the domain of a data set is *extrapolation*. Estimating within the domain is *interpolation*. Interpolation usually yields reliable estimates. Extrapolation becomes less reliable as you move farther away from the data.

III – Interpolation vs. Extrapolation

1)

a. Use **LINREG** to find a linear model for cheese consumption. Graph it with a scatter plot.

b. Reasoning Use the model to estimate consumption for 1980, 2000, and 2012. In which of these estimates do you have the most confidence? The least confidence? Explain.

Cheese Consumption

Year	Pounds Consumed
1910	4
1940	5
1970	8
1975	10
1995	25
2001	30