1. The following table shows the federal debt for the years since 1979.

Year	Federal Debt (in trillions of $)
1	0.909
2	0.994
3	1.1
4	1.4
5	1.6
6	1.8
7	2.1
8	2.3
9	2.6
10	2.9
11	3.2
12	3.6
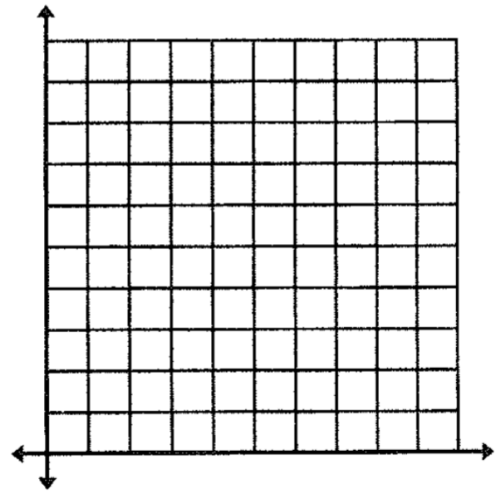
a) Construct a scatterplot on the grid provided.

b) Transform the data using the appropriate logarithms. Then, perform least squares regression on the transformed data. Write the LSRL equation for the transformed data.

c) What is the correlation coefficient?

d) What is the coefficient of determination? Interpret this value in context.

e) Perform an inverse transformation on your linear equation to obtain an exponential model for the original federal debt data. Write the equation for this model.

f) Use the model to predict the federal debt in the year 2000. Is it appropriate to do so?

g) What is the residual value for the federal debt in 1988?