The table below shows the population data from the U.S. Census since 1900. Use the table below to:

- a. Find a **linear** model. (Let x represent the number of years after 1900.)
- b. Use the model to re-create the table, keeping the same input, but now using the predicted values as the output.
- c. Create a residual plot.
- d. Decide based on the residual plot if you think a linear model is best. Justify your response.

ACTUAL		
Year	Population (in millions)	
1900	76	
1910	92	
1920	106	
1930	123	
1940	132	
1950	151	
1960	179	
1970	203	
1980	227	
1990	249	
2000	281	
2010	309	

PRE	EDJCTED	RESJDUAL
Year	Population (in millions)	Actual - Predicted
1900		
1910		
1920		1
1930		
1940		1
1950		1
1960		1
1970		
1980		1
1990		1
2000		1
2010		1
	•	-

Now use the graphing calculator to find the exponential regression.

Now find the quadratic regression.

Of the three models, which model do you think would be best? Justify your answer using complete sentences.