

Exponential Regression

name Key

1. In 1960, Walter purchased a plot of land for 10,000. The table shows how the value of the land has changed over time.

Year	1960	1965	1970	1975	1980
Value	10,000	21,000	41,000	82,000	163,000

Try using $x = 0$ to represent the year 1960.

Using your graphing calculator, use exponential regression to find an equation that best fits the data. Then, use the equation to predict what the land will be worth in the year 2020.

Equation: $y = \underline{10209.56} (1.149)^x$

Initial value: 10,209.56 Growth/Decay% 14.9%

In the year 2020: 42,482,370.97

Wow! That's inflation 😊

2. The water supply of a small town was contaminated in 1970. The following table shows the population change over time.

Year	1970	1971	1973	1974	1975
Value	2500	1195	317	160	72

Try using $x = 0$ to represent the year 1970.

Using your graphing calculator, use exponential regression to find an equation that best fits the data. Then, use the equation to predict what the land will be worth in the year 2020.

Equation: $y = \underline{2487.85} (.4975)^x$

Initial value: 2487.85 Growth/Decay% 50.25%

Predict the population in 1977 18,77 ≈ 19

In what year will the population reach 0? 1985-1986