

71. Population Statistics The table shows the life expectancy of a child (at birth) in the United States for selected years from 1930 to 2000. (Source: U.S. National Center for Health Statistics)



Year	Life expectancy, y
1930	59.7
1940	62.9
1950	68.2
1960	69.7
1970	70.8
1980	73.7
1990	75.4
2000	76.9



Xmin = _____ Ymin = _____

Xmax = _____ Ymax = _____

A model for the life expectancy during this period is given by

$$y = \frac{59.97 + 0.98t}{1 + 0.01t}, \quad 0 \leq t \leq 70$$

where y represents the life expectancy and t is the time in years, with $t = 0$ corresponding to 1930.

- What does the y -intercept of the graph of the model represent?
- Use the *zoom* and *trace* features of a graphing utility to determine the year when the life expectancy was 73.2. Verify your answer algebraically.
- Determine the life expectancy in 1948 both graphically and algebraically.
- Use the model to estimate the life expectancy of a child born in 2010.

