Life Expectancy at 65 *Using data for selected years from 1950 and projected to 2050, the function*

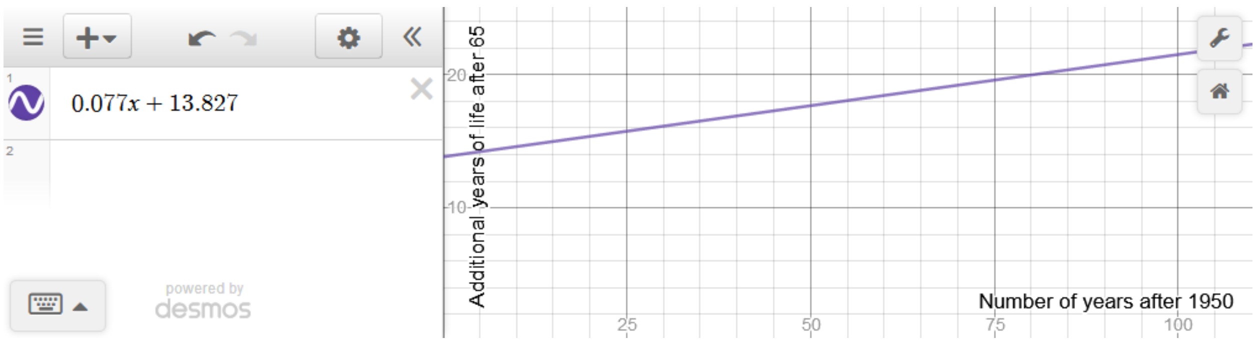
$$y = 0.077x + 13.827$$

gives the life expectancy at age 65, with y equal to the number of additional years of expected life at age 65 and x equal to the number of years after 1950.[1]

It's important to read this problem very carefully and notice when and how x and y are defined. Here's how it goes: If your 65 birthday is x years after 1950, then you can expect to live y more years. But this only works for people who turn 65 between the years 1950 and 2050.

So x represents the number of years after 1950 that a person turns 65 and y represents the number of additional years that person is expected to live.

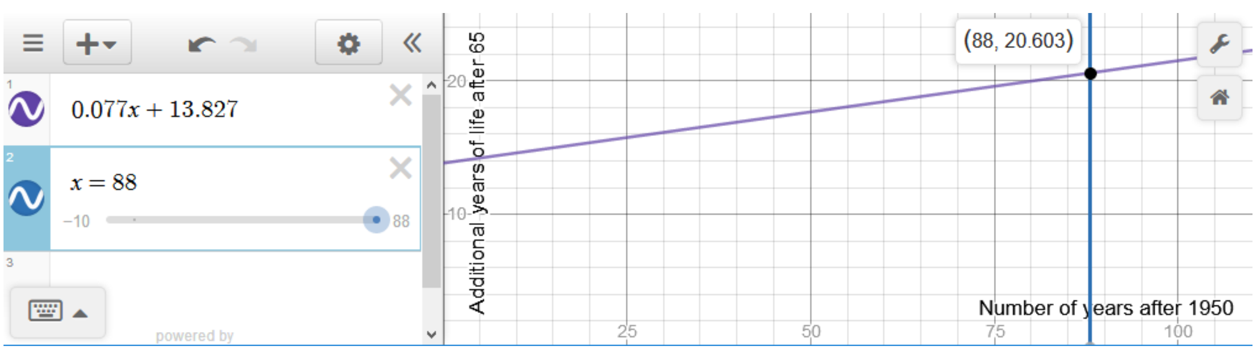
a. *Graph the model on the viewing window* [0,110] *by* [0,25]



b. *What time period does the viewing window in part (a) represent?*

Since x is the number of years after 1950 and $0 \leq x \leq 110$, the time period is from 1950 through 2060.

c. *Use the graphing utility to find what the model predicts the life expectancy to be in 2038, rounded to one decimal place.*



The year 2038 is 88 years after 1950 and we can see that when $x = 88$, $y = 20.603$. This means that the additional life expectancy is predicted to be 20.6 years.

A person who turns 65 years old in the year 2038 can expect to live 20.6 more years... to the ripe old age of 85.6.

[1] Harshbarger/Yocco, *College Algebra In Context, 5e*, p. 40, #44.