

5. [13 points] In 1940, there were 6.1 million farms in the United States, and this number decreased by a total of 60% during the next 40 years.
- [2 points] Based on the data above, how many farms were there in the US in 1980?
 - [5 points] Suppose that the number of farms decreased *at a constant rate* from 1940–1980. Find a formula for $F(t)$, the number of millions of farms in the US this model predicts there were t years after 1940 .

According to this model, in what year were there (or will there be) a total of 4 million farms in the US?

- [6 points] Now, suppose instead that the number of farms decreased *at a constant percent rate* from 1940–1980. Under this new assumption, by what percent did the number of farms in the US decrease each year between 1940 and 1980?

Find a formula for $P(t)$, the number of millions of farms in the US this model predicts there were t years after 1940 .