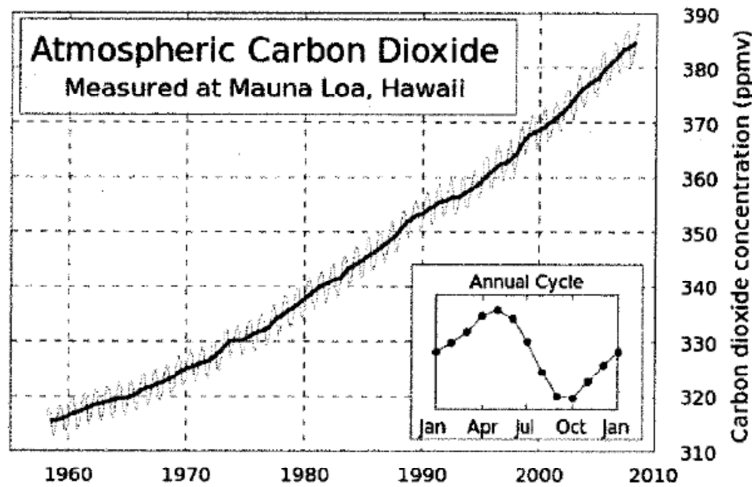


Global Warming Project

Global warming refers to the amount of increase in the average temperature of the earth. There has been a lot of attention in the 20th and 21st centuries about global warming due to the increased amount of carbon dioxide that has been released into the atmosphere since the industrial revolution.

Global warming is related to the amount of carbon dioxide (CO₂) in the atmosphere. To investigate what may be ahead, we can look at recent CO₂ levels. The data below was gathered at Mauna Loa, Hawaii.



Source: http://en.wikipedia.org/wiki/File:Mauna_Loa_Carbon_Dioxide-en.svg

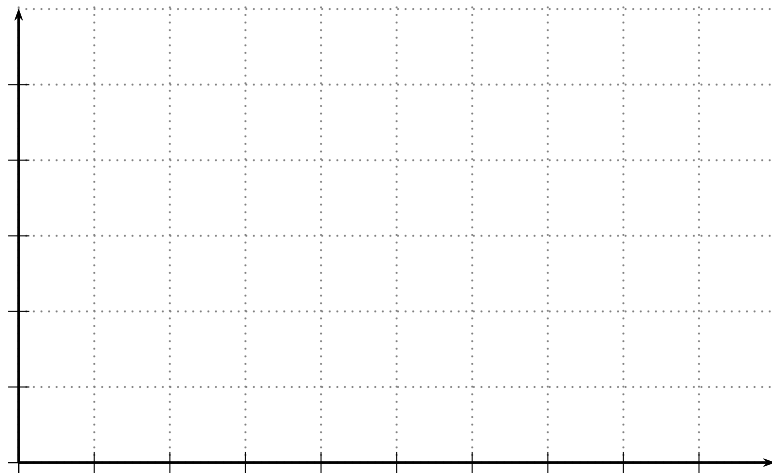
In the graph above, the dark curve represents the average CO₂ concentration by year. The lighter curve that wiggles up and down represents the seasonal increase and decrease of CO₂ each year.

- Using the dark line in the graph, fill in estimates for the CO₂ level for the given years.

Year	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010
Years since 1960											
CO ₂ level (ppmv)											

2. Let $C(t)$ be the average CO₂ levels t years after 1960. Write an exponential model $C = a \cdot b^t$ for your date. Use the data for 1960 and 2005 to find values for a and b . Show your work below. Round to 3 decimal places where needed.

3. Graph your data from Question #1 and your model from Question #2 on your graphing calculator. Set your window to $X_{\min} = 0$, $X_{\max} = 50$, $Y_{\min} = 300$ and $Y_{\max} = 400$. Then sketch the resulting graph (points and curve) below. Be sure to label the scale, units and variables axes on your graph below.



4. What is the C -intercept of your model? What does this mean in the context of the problem. Answer in complete sentences and include units in your answer.

