

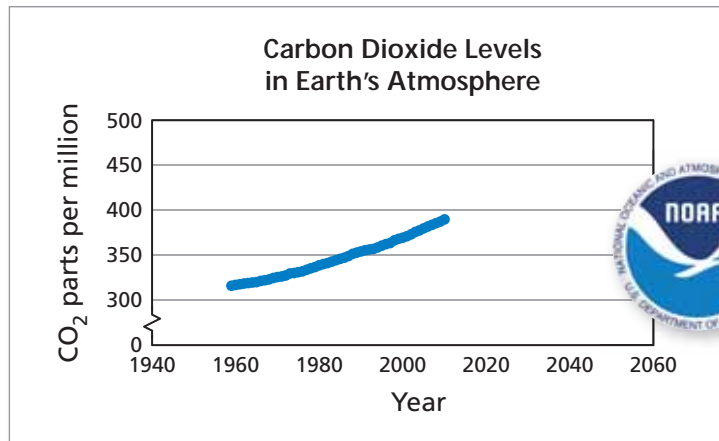
Using a Quadratic Pattern to Predict a Future Event



The Mauna Loa Observatory is an atmospheric research facility that has been collecting data related to atmospheric change since the 1950s. The observatory is part of the National Oceanic and Atmospheric Administration (NOAA).

EXAMPLE 3 Predicting a Future Event

The graph shows the increasing levels of carbon dioxide in Earth's atmosphere. Use the graph to predict the level of carbon dioxide in 2050.

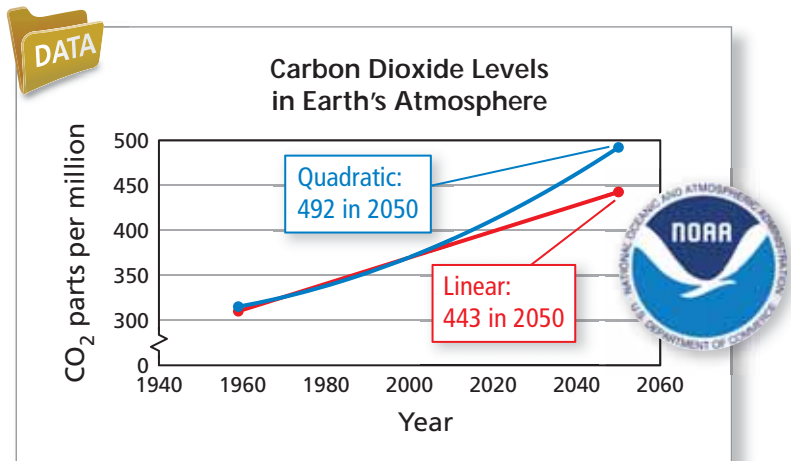


SOLUTION

The graph looks like it has a slight curve upward, which means that the rate of increase is increasing.

Using a linear regression program, the prediction for 2050 is 443 parts per million.

Using a quadratic regression program, the prediction for 2050 is 492 parts per million.



✓ Checkpoint

The graph shows the results of a plant experiment with different levels of nitrogen in various pots of soil. The vertical axis measures the number of blades of grass that grew in each pot of soil. Describe the pattern and explain its meaning.



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