7. [14 points] The rate at which a coal plant releases CO_2 into the atmosphere t days after 12:00 am on Jan 1, 2010 is given by the function $E(t)$ measured in tons per day. Suppose $\int_0^{31} E(t)dt = 223$.

a. [4 points] Give a practical interpretation of $\int_{31}^{59} E(t)dt$.

b. [4 points] Give a practical interpretation of $E(15) = 7.1$.

c. [2 points] The plant is upgrading to "clean coal" technology which will cause its July 2010 CO_2 emissions to be one fourth of its January 2010 CO_2 emissions. How much CO_2 will the coal plant release into the atmosphere in July?

d. [4 points] Using a left-hand sum with four subdivisions, write an expression which

approximates $\int_{31}^{59} E(t)dt$.