

65. Cost A manufacturer of lighting fixtures has daily production costs of

$$C = 800 - 10x + 0.25x^2$$

where C is the total cost (in dollars) and x is the number of units produced. Use the *table* feature of a graphing utility to determine how many fixtures should be produced each day to yield a minimum cost.

result algebraically.

67. Graphical Analysis From 1960 to 2001, the average annual per capita consumption C of cigarettes by Americans (age 18 and older) can be modeled by $C = 4274 + 3.4t - 1.52t^2$, $0 \leq t \leq 41$, where t is the year, with $t = 0$ corresponding to 1960. (Source: Tobacco Situation and Outlook Yearbook)

- Use a graphing utility to graph the model.
- Use the graph of the model to approximate the maximum average annual consumption. Beginning in 1966, all cigarette packages were required by law to carry a health warning. Do you think the warning had any effect? Explain.
- In 2000, the U.S. population (age 18 and over) was 209,128,000. Of these, about 48,300,000 were smokers. What was the average annual cigarette consumption *per smoker* in 2000? What was the average daily cigarette consumption *per smoker*?