Exponential Applications

a = 48.28

★ **EXTENDED RESPONSE** In 2000, the average price of a football ticket for a Minnesota Vikings game was $48.28. During the next 4 years, the price increased an average of 6% each year.

b = 1 + .06 = 1.06

a. Write a model giving the average price p (in dollars) of a ticket t years after 2000.

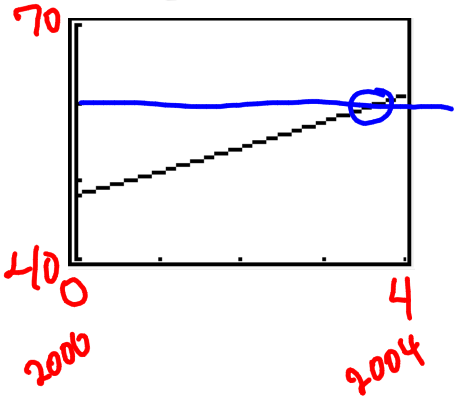
$y = 48.28(1.06)^x$

Use your calculator to make a graph, but set the window so that it shows the data for the relevant domain and range.

b. Graph the model. Estimate the year when the average price of a ticket was about $60.

$3.73 \approx 4^{th}$ year

c. *Explain* how you can use the graph of $p(t)$ to determine the minimum and maximum p-values over the domain for which the function gives meaningful results.



Domain: $0 \le x \le 4$

Range: $48.28 \le y \le 60.95$

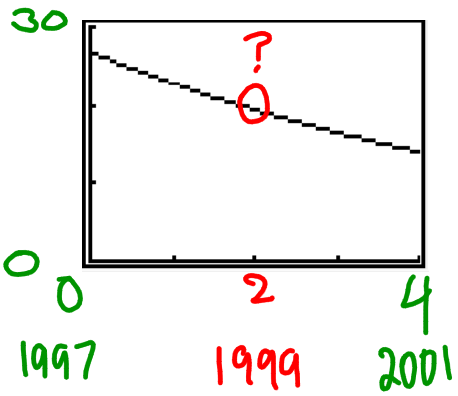
TV SALES From 1997 to 2001, the number n (in millions) of black-and-white TVs sold in the United States can be modeled by $n = 26.8(0.85)^t$ where t is the number of years since 1997. Identify the decay factor and the percent decrease. Graph the model and state the domain and range. Estimate the number of black-and-white TVs sold in 1999. *(p. 486)*

$y = 26.8(0.85)^x$

Starting value

decay factor

% decrease 15%



Set your window so that you see the graph for the relevant domain and range.

1999: Year 2 = 19.36 million TV's

D: $0 \le x \le 4$

R: $13.99 \le y \le 26.8$