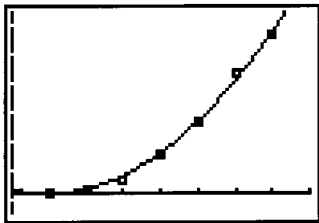


- 63 (a) Scatterplot the data in  $[1980, 1996, 2]$  by  $[-50,000, 500,000, 10,000]$ .
- (b) Start by letting the vertex be  $(1982, 1586)$ . With  $h = 1982$  and  $k = 1586$ ,  $f$  is represented by  $f(x) = a(x - 1982)^2 + 1586$ . Since the data is increasing to the right of the vertex,  $a$  is positive. Using trial and error,  $a$  is approximately 3100. *Answers may vary.* Thus,  $f(x) = 3100(x - 1982)^2 + 1586$ . The graph of  $f$  together with the data is shown in *Figure 63*.
- (c) Table  $f(x) = 3100(x - 1982)^2 + 1924$  starting at  $x = 1994$ , incrementing by 1. There will be approximately 795,186 AIDS cases in the year 1998, *if the trends in the table continue*. That is,  $f(1998) = 795,186$  cases of AIDS are predicted by  $f$  in the year 1998.

$[1980, 1996, 2]$  by  $[-50,000, 500,000, 10,000]$



*Figure 63*