

Answer each question in a complete sentence

41. True or False A correlation coefficient gives an indication of how closely a regression line or curve fits a set of data. Justify your answer.

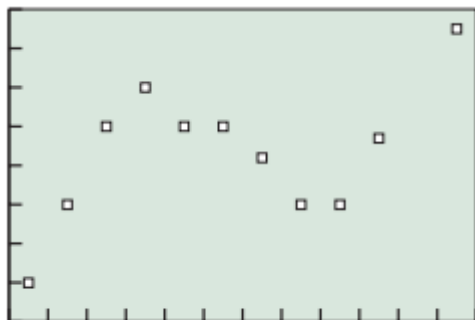
42. True or False Linear regression is useful for modeling the position of an object in free fall. Justify your answer.

In Exercises 43–46, tell which type of regression is likely to give the most accurate model for the scatter plot shown without using a calculator.

- (A) Linear regression
- (B) Quadratic regression
- (C) Cubic regression
- (D) Exponential regression
- (E) Sinusoidal regression

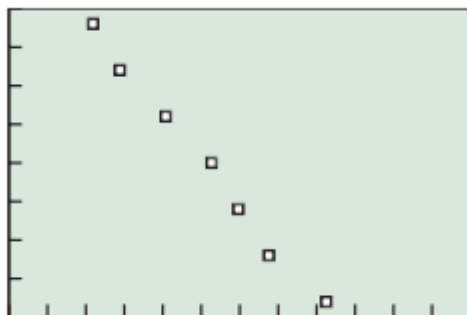
Sketch the graph with the correct regression model that should apply

43.



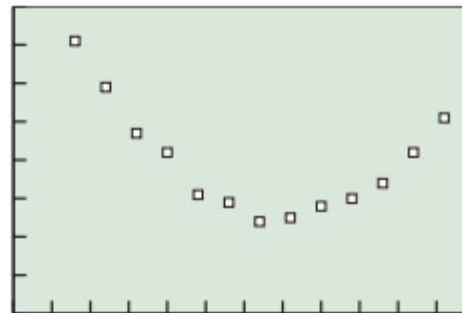
$[0, 12]$ by $[0, 8]$

44.



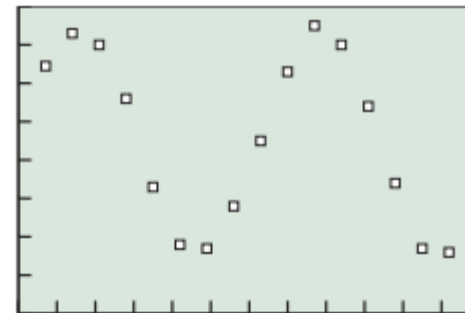
$[0, 12]$ by $[0, 8]$

45.



$[0, 12]$ by $[0, 8]$

46.



$[0, 12]$ by $[0, 8]$

50. Hourly Earnings of U.S. Production Workers The average hourly earnings of U.S. production workers for 1990–2003 are shown in Table 1.13.



Table 1.13 Average Hourly Earnings

Year	Average Hourly Earnings
1990	10.19
1991	10.50
1992	10.76
1993	11.03
1994	11.32
1995	11.64
1996	12.03
1997	12.49
1998	13.00
1999	13.47
2000	14.00
2001	14.53
2002	14.95
2003	15.35

Source: Bureau of Labor Statistics, U.S. Dept. of Labor, as reported in The World Almanac and Book of Facts 2005.

- (a)** Produce a scatter plot of the hourly earnings (y) as a function of years since 1990 (x).
- (b)** Find the linear regression equation. Round the coefficients to the nearest 0.001.
- (c)** Does the value of r suggest that the linear model is appropriate?
- (d)** Find the quadratic regression equation. (Round the coefficients to the nearest 0.01.)
- (e)** Does the value of R^2 suggest that a quadratic model is appropriate?
- (f)** Use both curves to predict the hourly AHE for the year 2010. How different are the estimates?