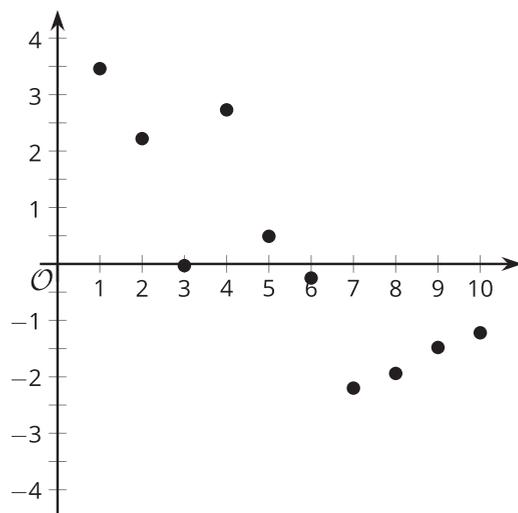


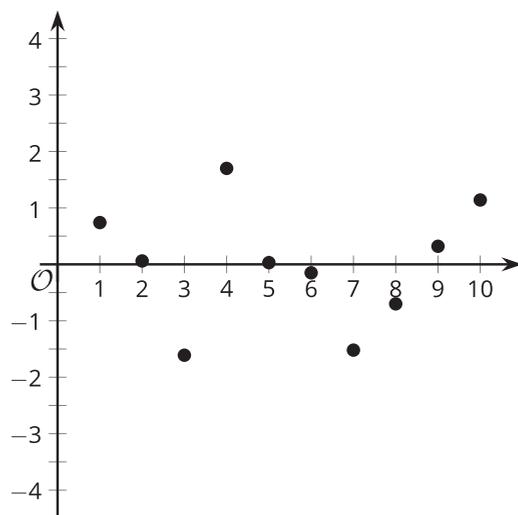
## Lesson 6 Practice Problems

1. Han creates a scatter plot that displays the relationship between the number of items sold,  $x$ , and the total revenue,  $y$ , in dollars. Han creates a line of best fit and finds that the residual for the point  $(12, 1,000)$  is 75. The point  $(13, 930)$  has a residual of -40. Interpret the meaning of -40 in the context of the problem.
2. The line of best fit for a data set is  $y = 1.1x + 3.4$ . Find the residual for each of the coordinate pairs,  $(x, y)$ .
  - a.  $(5, 8.8)$
  - b.  $(2.5, 5.95)$
  - c.  $(0, 3.72)$
  - d.  $(1.5, 5.05)$
  - e.  $(-3, 0)$
  - f.  $(-5, -4.86)$
3. Plots of the residuals for four different models of the same data set are displayed. Which of the following represents the plot of the residuals from a model that fits its data best?

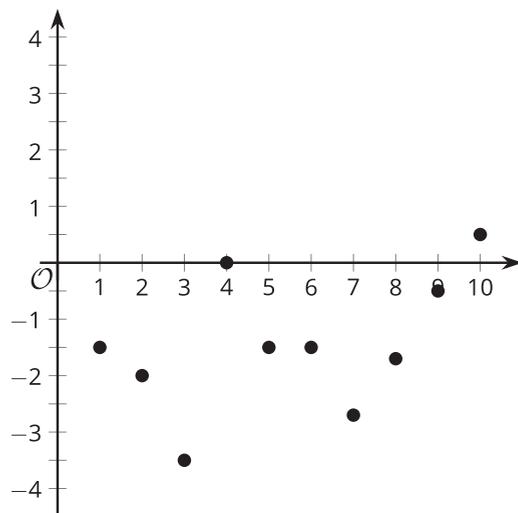
A.

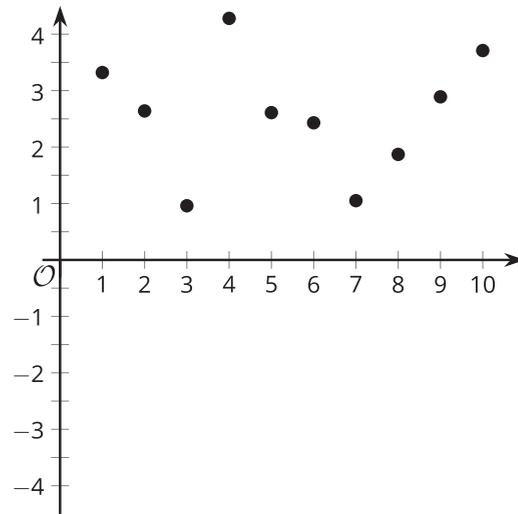


B.



C.

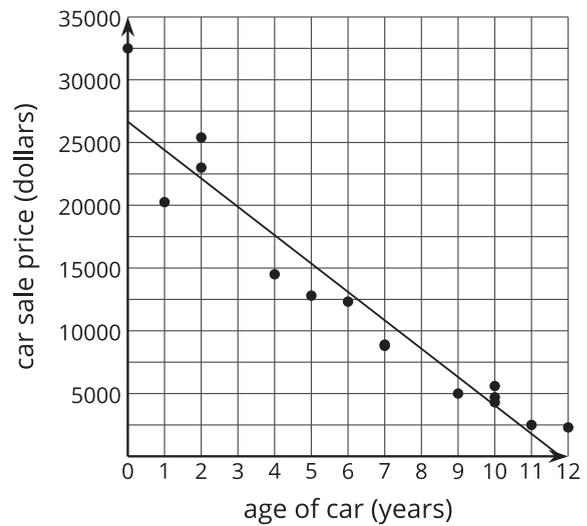




D.

4. A local car salesperson created a scatter plot to display the relationship between a car's sale price in dollars,  $y$ , and the age of the car in years,  $x$ .

The scatter plot and the line of best fit are displayed in the graph.



The car salesperson looks at the residuals for the car sales.

- a. For a car that is 4 years old, does the salesperson sell above or below her average selling price? Explain your reasoning.
  
- b. For a car that is 12 years old, does the salesperson sell above or below her average selling price? Explain your reasoning.

5. *Technology required.*

Data about the outside temperature and gas used for heating a building are given in the table.

Use a graphing calculator to create the line of best fit for the data.

temperature (deg F) $x$	gas usage (therms) $y$
58	5,686
62	7,373
64	5,805
67	5,636
70	3,782
73	3,976
74	3,351
74	3,396
75	2,936
73	3,078
65	4,549
59	7,022
58	6,106
62	4,566
64	4,608
67	5,790
70	6,501
73	3,843

