For these first two problems, assume \( y \) varies directly as \( x \). Use \( y = mx \) solve for \( m \), then write the equation so you can answer the question.

7. If \( y = -8 \) when \( x = -2 \), find \( x \) when \( y = 32 \).

9. If \( y = -4 \) when \( x = 2 \), find \( y \) when \( x = -6 \).

Write the slope-intercept form of an equation of the line that passes through the given point and is parallel to the graph of each equation.

1. \((3, 2), y = x + 5\)  
2. \((-2, 5), y = -4x + 2\)

Write the slope-intercept form of an equation of the line that passes through the given point and is perpendicular to the graph of each equation.

13. \((-2, -2), y = -\frac{1}{3}x + 9\)  
14. \((-6, 5), x - y = 5\)

**BASEBALL** For Exercises 5–7, use the scatter plot that shows the average price of a major-league baseball ticket from 1991 to 2000.

5. Determine what relationship, if any, exists in the data. Explain.

6. Use the points \((1993, 9.60)\) and \((1998, 13.60)\) to write the slope-intercept form of an equation for the line of fit shown in the scatter plot.

Write an equation perpendicular to the given line and that goes through the given point.

16. \((0, 1), x + 5y = 15\)

ZOOS For Exercises 7–10, use the table that shows the average and maximum longevity of various animals in captivity.

7. Draw a scatter plot and determine what relationship, if any, exists in the data.

8. Draw a line of fit for the scatter plot.

9. Write the slope-intercept form of an equation for the line of fit.

10. Predict the maximum longevity for an animal with an average longevity of 33 years.

<table>
<thead>
<tr>
<th>Longevity (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avg.</strong></td>
</tr>
<tr>
<td><strong>Max.</strong></td>
</tr>
</tbody>
</table>

Source: Walker's Mammals of the World

SHIPPING The number of delivered toys \(T\) is 3 times the total number of crates \(c\).

8. If \(y = 45\) when \(x = 15\), find \(x\) when \(y = 15\).

10. If \(y = -9\) when \(x = 3\), find \(y\) when \(x = -5\).