

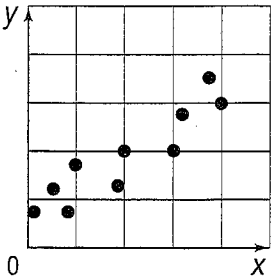
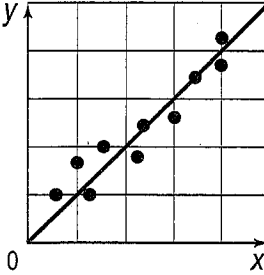
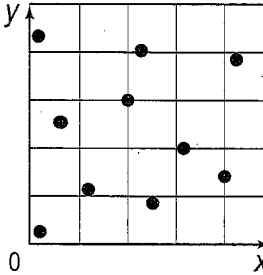
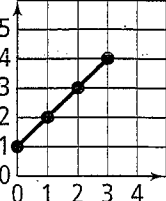
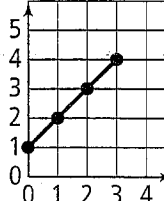
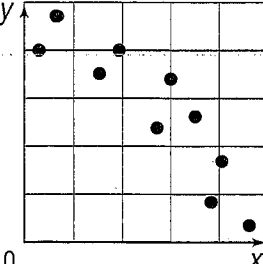
5-7 ELL Support

Scatter Plots and Trend Lines

Concept List

- | | | |
|---------------------|-------------------------|----------------------|
| causal relationship | correlation coefficient | extrapolation |
| interpolation | line of best fit | negative correlation |
| no correlation | positive correlation | trend line |

Choose the concept from the list above that best represents the item in each box.

<p>1. LinReg ($ax + b$)</p>	<p>2. </p>	<p>3. <table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">Practice Time (hours)</th> <th style="padding: 5px;">Grade in Band Class</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">10</td> <td style="padding: 5px;">C</td> </tr> <tr> <td style="padding: 5px;">20</td> <td style="padding: 5px;">B</td> </tr> <tr> <td style="padding: 5px;">40</td> <td style="padding: 5px;">A</td> </tr> </tbody> </table></p>	Practice Time (hours)	Grade in Band Class	10	C	20	B	40	A
Practice Time (hours)	Grade in Band Class									
10	C									
20	B									
40	A									
<p>4. </p>	<p>5. $r = -1$ $r = 0$ $r = 1$ ← → Strong Negative Correlation No Correlation Strong Positive Correlation</p>	<p>6. </p>								
<p>7. </p> <p>Estimate the value for y when $x = 3.5$.</p>	<p>8. </p> <p>Estimate the value for y when $x = 1.5$.</p>	<p>9. </p>								

5-7

Think About a Plan

Scatter Plots and Trend Lines

U.S. Population Use the data below.

Estimated Population of the United States (thousands)

Year	2000	2001	2002	2003	2004	2005	2006
Male	138,482	140,079	141,592	142,937	144,467	145,973	147,512
Female	143,734	145,147	146,533	147,858	149,170	150,533	151,886

Source: U.S. Census Bureau

- Make a scatter plot of the data pairs (male population, female population).
 - Draw a trend line and write its equation.
 - Use your equation to predict the U.S. female population if the U.S. male population increases to 150,000,000.
 - Reasoning** Consider a scatter plot of the data pairs (year, male population). Would it be reasonable to use this scatter plot to predict the U.S. male population in 2035? Explain your reasoning.
- Make a scatter plot of the data pairs using the male population for the x -coordinates and the female population for the y -coordinates for each year.
 - Draw the trend line onto the scatter plot.
 - How do you determine the equation of a trend line? What is the equation of this trend line? Show your work.

 - Substitute 150,000,000 for x to predict the female population. _____
 - Make a scatter plot of the data pairs (year, male population).
 - Would it be reasonable to use this scatter plot to predict the U.S. male population in 2035? Explain your reasoning.

