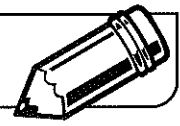
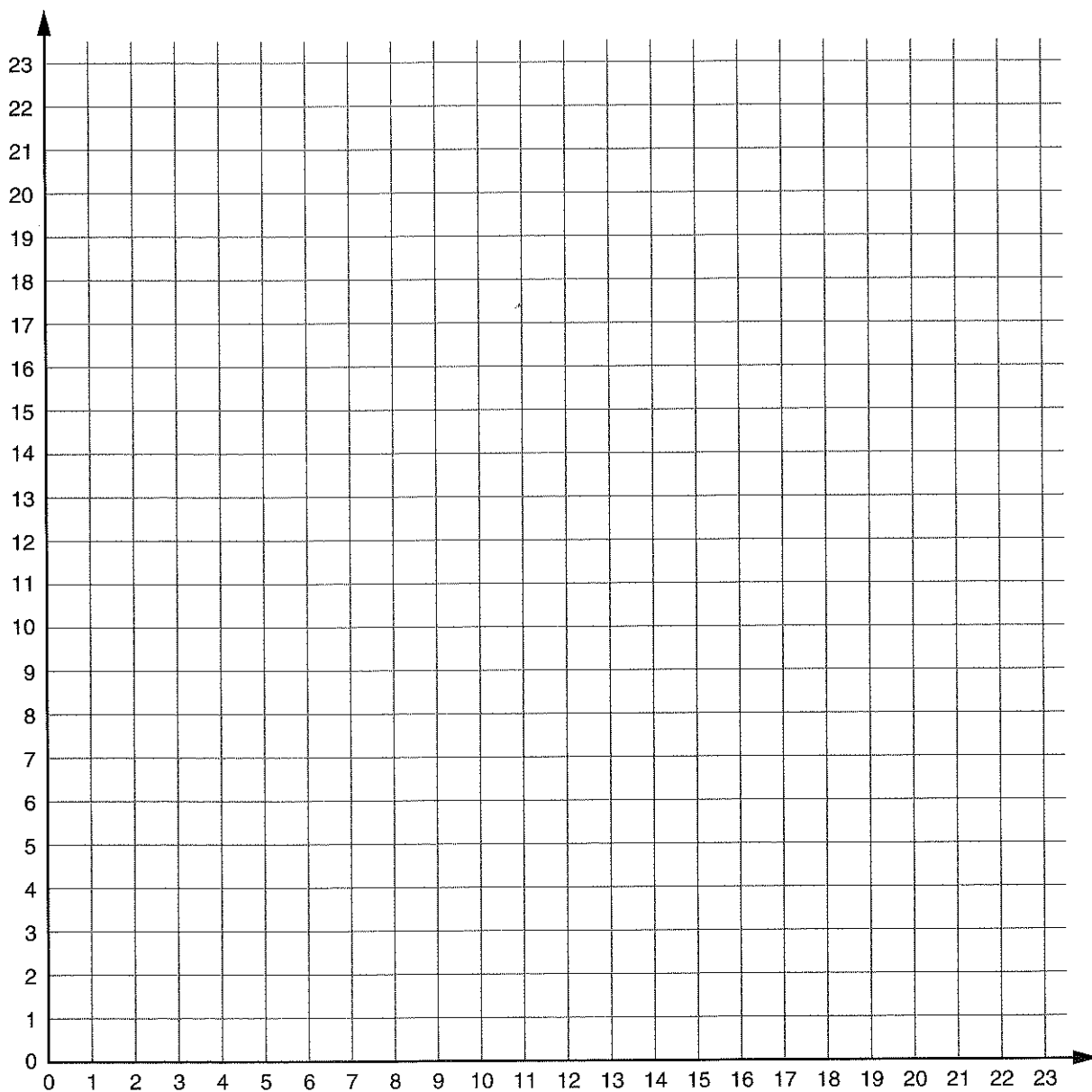


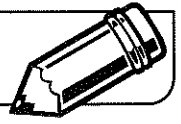
LESSON
9•2**Plotting a Picture**

1. Draw a simple picture on the grid by connecting points with straight lines. (Use at least 8 points, but no more than 14 points.)
2. Record the ordered pairs you have plotted on a separate sheet of paper. Be sure you record your points in the order in which they need to be connected.
3. Give your list of coordinates and a blank grid to your partner, and have your partner reproduce your drawing by plotting and connecting the points.
4. Compare your original picture with your partner's copy.



LESSON
9•2

Scaling Graphs



Scaling a figure on a coordinate grid makes the figure larger or smaller along the coordinate directions. Using a notation to write the scale is another way to represent the rule used to transform a figure.

For example, using $(M2,M2)$ doubles the width and the height of a figure.

This is “double scale” notation that shows how the ordered number pairs change. The M stands for multiplication. The x -axis coordinate is multiplied by 2, and the y -axis coordinate is multiplied by 2.

- ◆ $(M1,M0.5)$ compresses the figure on the y -axis to half the original dimensions.
- ◆ $(M2,M1)$ expands the figure on the x -axis to twice the original dimensions.

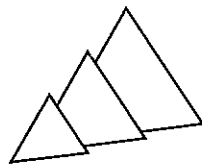
1. How would you describe a new figure that was scaled $(M1,M1)$ from the original?

2. Plot and connect the following coordinates on the grid below:

$(4,0.5)$; $(2.5,0.5)$; $(2.5,3.5)$; $(0.5,1)$; $(2.5,0.5)$; $(0,0.5)$; $(1,0)$; $(3.5,0)$; $(4,0.5)$

3. Scale the Problem 2 figure to graph two new figures.

Each figure should be a different size. Locate the coordinates, and connect the points so the scaled figures are one behind the other on the grid. *For example:*



4. Write your rules and the corresponding double scales for each of the new figures on the back of this page.

