

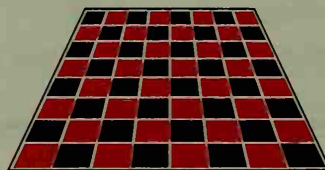
## Congruence of Quadrilaterals (Chapter 4)

Use the following exercises to investigate methods of proving congruence of quadrilaterals similar to the ASA, SAS, SSS congruence postulates for triangles.

1. Does the SAS method of proving congruence work for quadrilaterals? That is, if two quadrilaterals  $ABCD$  and  $EFGH$  have  $\overline{AB} \cong \overline{EF}$ ,  $\angle ABC \cong \angle EFG$ , and  $\overline{BC} \cong \overline{FG}$ , must the two quadrilaterals be congruent? If so, give a proof. If not, draw a diagram that shows that the method does not work.
2. For each of the following possible methods of proving congruence of quadrilaterals, either prove that the method works, or draw a picture that shows it does not imply congruence. As with triangles, the parts represented by the letters in each abbreviation are consecutive as you move in one direction around the quadrilateral.
  - a. SASA
  - b. SASAS
  - c. SSSS
  - d. SASSS
3. Find at least two more methods of proving congruence of quadrilaterals. Prove that your methods work.

## Perspective Drawing (Chapter 5)

The diagram at the right is a view of a checkerboard. Although you know that a checkerboard is composed of congruent squares, here the squares appear distorted in both size and shape. The checkerboard has been drawn *in perspective*, giving the figure a sense of depth.



Research and write a report on perspective drawing. The following suggestions may help you decide what to include in your report.

- Explain what is meant by a *vanishing point*.
- The checkerboard shown above is drawn from a *one-point* perspective, while the cereal box shown at the right is drawn from a *two-point* perspective. Discuss the differences between one- and two-point perspective drawing.
- Describe how to draw the checkerboard shown above from a one-point perspective. Use your knowledge of parallel lines and transversals to explain why the method works. That is, why do the 64 quadrilaterals represent 64 *congruent squares*?
- Illustrate your report with pictures you have drawn from one- or two-point perspective and describe the steps involved in drawing them.
- Give a brief history of the use of perspective drawing in art.

