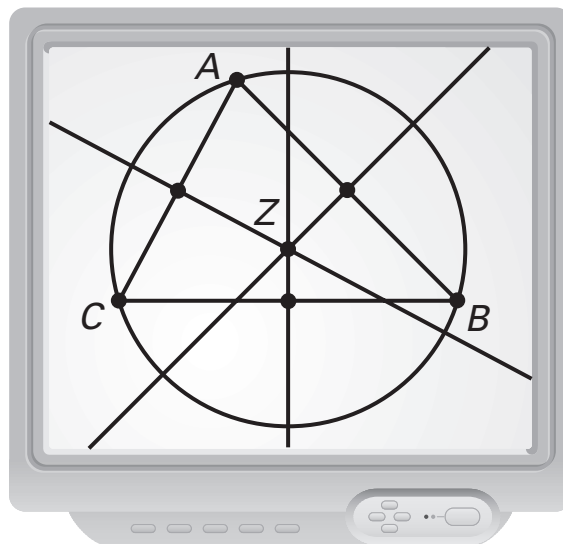


**Geometry Software Lesson Opener**

For use with pages 272–278

**Use geometry software to construct and investigate the perpendicular bisectors of a triangle.**

1. Draw any acute triangle  $ABC$ . Construct the midpoint of each side of the triangle. Then construct a perpendicular line through each midpoint. You now have the three perpendicular bisectors of  $\triangle ABC$ . Label  $Z$ , the point of intersection of three perpendicular bisectors. Measure  $\overline{AZ}$ ,  $\overline{BZ}$ , and  $\overline{CZ}$ . Construct a circle with center  $Z$  and radius  $AZ$ . Then answer the following questions.



- a. Do the three perpendicular bisectors intersect in one point?
  - b. Is  $Z$  *inside*, *on*, or *outside*  $\triangle ABC$ ?
  - c. What do you notice about  $AZ$ ,  $BZ$ , and  $CZ$ ?
  - d. Through which points of  $\triangle ABC$  does the circle pass?
2. Repeat Exercise 1 for any right triangle  $ABC$ .
3. Repeat Exercise 1 for any obtuse triangle  $ABC$ .
4. Write a paragraph about the perpendicular bisectors of a triangle.