ACTIVITY 6.2

Using Technology

Geometry Software Activity for use with Lesson 6.2

Investigating Parallelograms

You can use geometry software to explore the properties of parallelograms. A parallelogram is a quadrilateral with both pairs of opposite sides parallel.

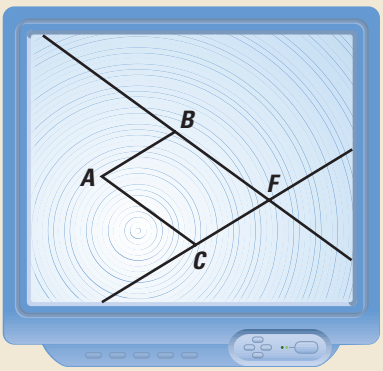
STUDENT HELP

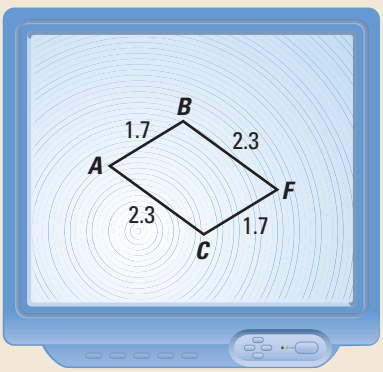
INTERNET SOFTWARE HELP

Visit our Web site www.mcdougallittell.com to see instructions for several software applications.

CONSTRUCT Construct a parallelogram.

1. To construct a parallelogram, draw a segment and label it $\overline{AB}$. From point A, draw another segment. Label it $\overline{AC}$.
2. Construct a line through B parallel to $\overline{AC}$.
3. Construct a line through C parallel to $\overline{AB}$.
4. Mark the intersection of these two lines F and hide the lines.
5. Draw $\overline{BF}$ and $\overline{CF}$ to form parallelogram $ABFC$.





INVESTIGATE

1. Drag points A, B, and C one at a time and notice how $ABFC$ changes. Is $ABFC$ always a parallelogram? How do you know?
2. Measure $\overline{AB}$, $\overline{BF}$, $\overline{CF}$, and $\overline{AC}$. What do you notice?
3. Drag points A, B, and C one at a time, continuing to compare the side lengths. What do you notice?

MAKE A CONJECTURE

4. Make a conjecture about the sides of a parallelogram.

INVESTIGATE

5. Measure $\angle A$, $\angle B$, $\angle C$, and $\angle F$. Drag points A, B, and C one at a time while comparing the angle measures. What do you notice?

MAKE A CONJECTURE

6. Make a conjecture about opposite angles of a parallelogram.

EXTENSION

CRITICAL THINKING Draw the diagonals of parallelogram $ABFC$. Measure the distance from the intersection of the diagonals to each vertex of the parallelogram. Make and test a conjecture.