Real-Life Application: When Will I Ever Use This?

For use with pages 330–337

Washington, D.C.

Washington, D.C. became the capital of the United States in 1800 and has since grown into a major metropolis visited by millions of people each year. It is home to major federal government buildings, such as the Capitol, and the White House, not to mention historical sites like the Washington Monument and the Lincoln Memorial.

In 1791, President George Washington chose the site for the new capital on the banks of the Potomac River and appointed a French engineer named Pierre Charles L'Enfant to design the city. With the help of American surveyors Andrew Ellicot and Benjamin Banneker, Washington, D.C. became one of the few cities in the world to actually be planned before being built.

Today, with millions of people living in the metropolitan area, efficient transportation is a major challenge. The street map below of a portion of Washington, D.C. shows how many geometrical concepts go into planning streets and highways. Although most of the streets form a rectangle, notice the parallelogram that is not a rectangle.

In Exercises 1–4, refer to the map of Washington, D.C. below. Assume that *ABCD* is a parallelogram. Justify your answer to the question using the theorems about parallelograms.

1. The length of sides $\overline{AB}$ and $\overline{BC}$ is 5 centimeters. Find *CD* and *DA*.

2. The measure of ∠*A* is 110°. What is the measure of ∠*C*?

3. Find the measure of ∠*D*.

4. Is *ABCD* a square? Why or why not?

5. What is an advantage of having streets that form nonrectangular parallelograms?

Lesson 6.2