Study Guide

What's the chapter about?

Chapter 7 is about **transformations**. Transformations describe how geometric figures of the same shape are related to one another. In Chapter 7, you'll learn

- three ways to describe motion of geometric figures in the plane.
- how to use transformations in real-life situations, such as making a kaleidoscope or designing a border pattern.

KEY VOCABULARY

▶ **Review**
- **Distance Formula, p. 19**
- **parallel lines, p. 129**
- **congruent figures, p. 202**
- **corresponding sides, p. 202**
- **corresponding angles, p. 202**

▶ **New**
- **image, p. 396**
- **preimage, p. 396**
- **transformation, p. 396**
- **reflection, p. 404**
- **rotation, p. 412**

- **translation, p. 421**
- **vector, p. 423**
- **glide reflection, p. 430**
- **frieze pattern, p. 437**
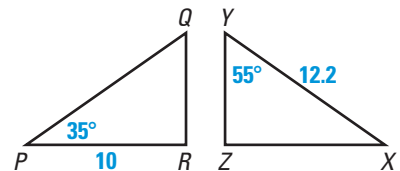
Are you ready for the chapter?

SKILL REVIEW Do these exercises to review key skills that you'll apply in this chapter. See the given **reference page** if there is something you don't understand.

Use the Distance Formula to decide whether $\overline{AB} \cong \overline{BC}$. (Review p. 19)

1. $A(-6, 4)$
$\quad B(1, 3)$
$\quad C(8, 4)$

2. $A(0, 3)$
$\quad B(3, 1)$
$\quad C(7, 4)$

3. $A(1, 1)$
$\quad B(4, 6)$
$\quad C(7, 1)$

Complete the statement, given that $\triangle PQR \cong \triangle XYZ$. (Review p. 202)

4. $XZ = \underline{\ ?\ }$

5. $m\angle X = \underline{\ ?\ }$

6. $m\angle Q = \underline{\ ?\ }$

7. $m\angle Z = \underline{\ ?\ }$

8. $\overline{YZ} \cong \underline{\ ?\ }$

9. $QR = \underline{\ ?\ }$

STUDENT HELP

▶ **Study Tip**
"Student Help" boxes throughout the chapter give you study tips and tell you where to look for extra help in this book and on the Internet.

Here's a study strategy!

Making Sample Exercises

Writing your own exercises can test what you have learned in this chapter. After each lesson, follow these steps:

- Write a summary of the lesson.
- Write at least three exercises that test the lesson's goals.