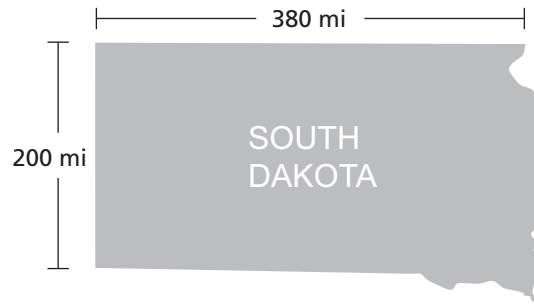## 1.1 Practice A

**In Exercises 1–4, find the indicated measure.**

1. The state of South Dakota has a population of about 814,000 people. Find the population density in people per square mile.

2. About 1.2 million people live in a circular region with a 6-mile radius. Find the population density in people per square mile.

3. A circular region with a 15-mile diameter has a population density of about 5000 people per square mile. Find the number of people who live in the region.

4. About 52,000 people live in a circular region with a population density of about 115 people per square mile. Find the radius of the region.

5. A rectangular swimming pool of length ℓ and width w has a perimeter of 64 feet.

   a. Write an expression that represents the area of the swimming pool in terms of w.

   b. Use your expression from part (a) to determine the dimensions of the pool that maximize the area. What do you notice?

In Exercises 6 and 7, describe how the change affects the surface area of the right prism or right cylinder.

6. tripling all the linear dimensions
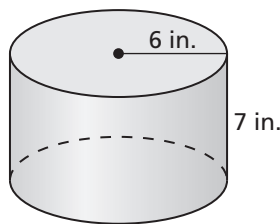
7. multiplying all the linear dimensions by $\frac{1}{4}$