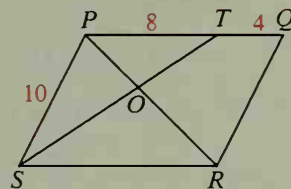


## Self-Test 2

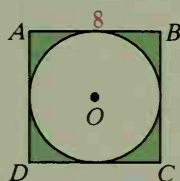
Leave your answers in terms of  $\pi$  unless you are told to use an approximation.

- Find the circumference and area of a circle with radius 14. Use  $\pi \approx \frac{22}{7}$ .
- The circumference of a circle is  $18\pi$ . What is its area?
- In  $\odot O$  with radius 12,  $m\widehat{AB} = 90$ .
  - Find the length of  $\widehat{AB}$ .
  - Find the area of sector  $AOB$ .
  - Find the area of the region bounded by  $\widehat{AB}$  and  $\overline{AB}$ .
- Find the ratio of the areas of two circles with radii 4 and 7.
- The areas of two similar triangles are 36 and 81. Find the ratio of their perimeters.
- $PQRS$  is a parallelogram. Find the ratio of the areas of:
  - $\triangle PTO$  and  $\triangle RSO$
  - $\triangle RPS$  and  $\triangle TPS$

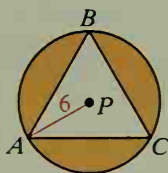


Each polygon is a regular polygon. Find the area of the shaded region.

7.



8.



$\odot O$  is inscribed in square  $ABCD$ .

$\triangle ABC$  is inscribed in  $\odot P$ .

- Refer to  $\square PQRS$  in Exercise 6. A point is randomly chosen on  $\overline{PR}$ . Find the probability that the point is on  $\overline{OR}$ .
- Suppose that the figure in Exercise 7 is a dartboard. Imagine that someone with poor aim throws a dart and you *hear* it hit the dartboard. What is the probability that the dart landed inside the circle?

### Extra

## Congruence and Area

The SAS Postulate tells us that a triangle is *determined*, or fixed in size and shape, when two sides and the included angle are fixed. This means that the other parts of the triangle and its area can be determined from the given SAS information. Similarly, the area of a triangle can be determined when given ASA, SSS, AAS, or HL information. Computing the area of a triangle can often be simplified by using a calculator.