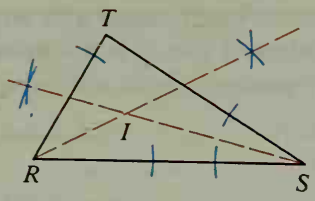
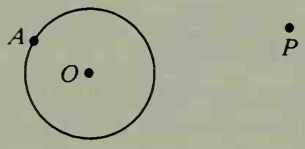
**7.** A student intends to inscribe a circle in $\triangle RST$. The center $I$ has been found as shown. How should the student find the radius needed?




## Written Exercises

**In Exercises 1 and 2 draw a diagram similar to the one shown, but larger.**




A

**1.** Construct a tangent at $A$.

**2.** Construct two tangents from $P$.

**3.** Draw a large acute triangle. Construct the circumscribed circle.

**4.** Construct a large right triangle. Construct the circumscribed circle.

**5.** Draw a large obtuse triangle. Construct the circumscribed circle.

**6.** Draw a large acute triangle. Construct the inscribed circle.

**7.** Construct a large right triangle. Construct the inscribed circle.

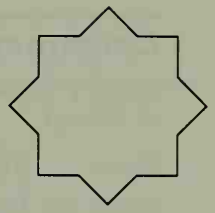
**8.** Draw a large obtuse triangle. Construct the inscribed circle.

B

**9.** Draw a circle. Inscribe an equilateral triangle in the circle.

**10.** Draw a circle. Inscribe a square in the circle.

**11.** **a.** Draw a circle. Inscribe a regular octagon in the circle.
**b.** How would you use your construction in part (a) to create an eight-pointed star as shown at the right?



**Ex. 11(b)**

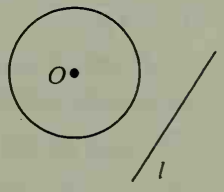
**12.** Draw a circle. Circumscribe a square about the circle.

**13.** Construct a square. Circumscribe a circle about the square.

**14.** Construct a square. Inscribe a circle in the square.

**15.** Draw a circle. Circumscribe an equilateral triangle about the circle.

**In each of Exercises 16 and 17 begin with a diagram roughly like the one shown, but larger.**




**16.** Construct a line that is parallel to line $l$ and tangent to $\odot O$.

**17.** Construct a line that is perpendicular to line $l$ and tangent to $\odot O$.

C

**18.** Construct three congruent circles, each tangent to the other two circles. Then construct an equilateral triangle, each side of which is tangent to two of the circles.