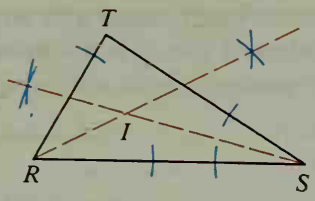
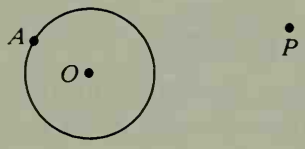
7. A student intends to inscribe a circle in $\triangle RST$. The center I has been found as shown. How should the student find the radius needed?



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.

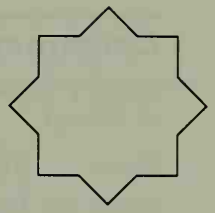
8. Draw a large obtuse triangle. Construct the inscribed circle.

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)

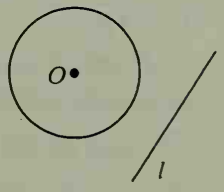
12. Draw a circle. Circumscribe a square about the circle.

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.