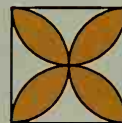
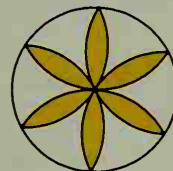


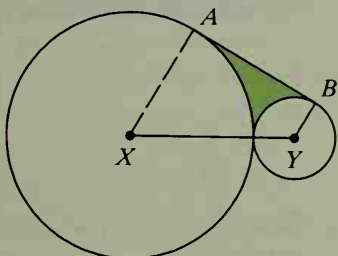
24. $ABCD$ is a square with sides 8 cm long. Two circles each with radius 8 cm are drawn, one with center A and the other with center C . Find the area of the region inside both circles.
25. Two circles have radii 6 cm and their centers are 6 cm apart. Find the area of the region common to both circles.
26. a. Draw a square. Then construct the figure shown at the right.
b. If the radius of the square is 2, find the area of the shaded region.



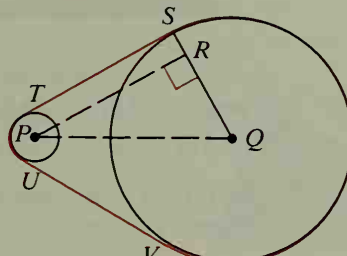
- C 27. a. Using only a compass, construct the six-pointed figure shown at the right.
b. If the radius of the circle is 6, find the area of the shaded region.
28. Three circles with radii 6 are tangent to each other. Find the area of the region enclosed between them.



- ★ 29. Circles X and Y , with radii 6 and 2, are tangent to each other. \overline{AB} is a common external tangent. Find the area of the shaded region. (Hint: What kind of figure is $AXYB$? What is the measure of $\angle AXY$?)



Ex. 29



Ex. 30

- ★ 30. The diagram at the right above shows a belt tightly stretched over two wheels with radii 5 cm and 25 cm. The distance between the centers of the wheels is 40 cm. Find the length of the belt.

Challenge

Here \overline{XY} has been divided into five congruent segments and semicircles have been drawn. But suppose \overline{XY} were divided into millions of congruent segments and semicircles were drawn. What would the sum of the lengths of the arcs be?

Sarah says, “ \overline{XY} , because all the points would be so close to \overline{XY} .” Mike says, “A really large number, because there would be so many arc lengths to add up.” What do you say?

