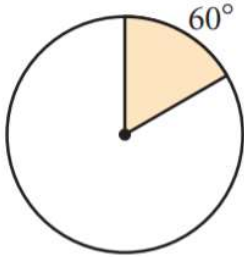
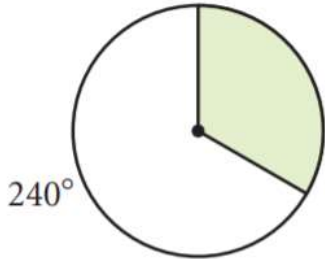


In Exercises 1-8, find the area of the shaded region. The radius of each circle is  $r$ . If two circles are shown,  $r$  is the radius of the smaller circle and  $R$  is the radius of the larger circle.

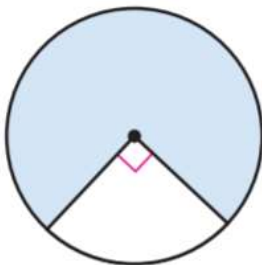
1)  $r = 6$  cm



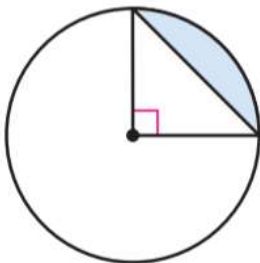
2)  $r = 8$  cm



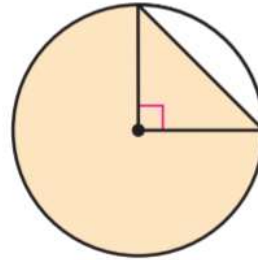
3)  $r = 16$  cm



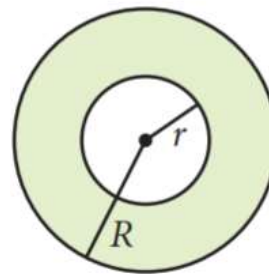
4)  $r = 2$  cm



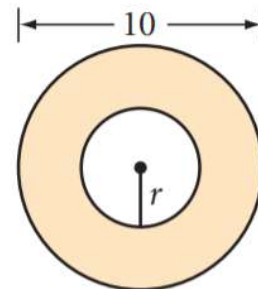
5)  $r = 8$  cm



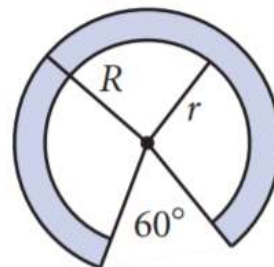
6)  $R = 7$  cm  
 $r = 4$  cm



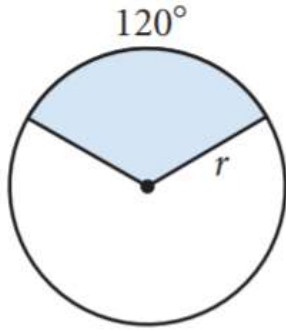
7)  $r = 2$  cm



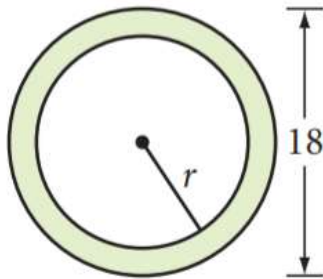
8)  $R = 12$  cm  
 $r = 9$  cm



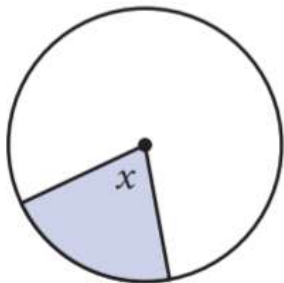
9) The shaded area is  $12\pi \text{ cm}^2$ . Find  $r$ .



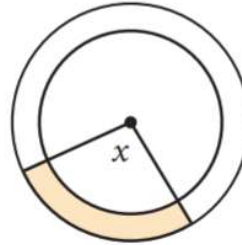
10) The shaded area is  $32\pi \text{ cm}^2$ . Find  $r$ .



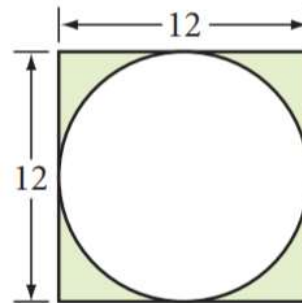
11) The shaded area is  $120\pi \text{ cm}^2$ , and the radius is  $24 \text{ cm}$ . Find  $x$ .



12) The shaded area is  $10\pi \text{ cm}^2$ . The radius of the large circle is  $10 \text{ cm}$ , and the radius of the small circle is  $8 \text{ cm}$ . Find  $x$ .



13) What is the area of the shaded region?



14) What is the area of the shaded region?

