

## 5. **Answers**

1. **On the Cartesian coordinate plane**, translate each circle with center  $C$  and radius  $r$  to the circle with center  $C'$  and radius  $r$ .  
a.  $C(1, 1)$ ,  $r = 2$  to  $C'(3, 3)$ ,  $r = 2$ . The original circle is shaded in blue. The new circle is shaded in red.  
b.  $C(1, 1)$ ,  $r = 2$  to  $C'(3, -1)$ ,  $r = 2$ . The original circle is shaded in blue. The new circle is shaded in red.  
c.  $C(1, 1)$ ,  $r = 2$  to  $C'(1, 3)$ ,  $r = 2$ . The original circle is shaded in blue. The new circle is shaded in red.  
d.  $C(1, 1)$ ,  $r = 2$  to  $C'(1, -1)$ ,  $r = 2$ . The original circle is shaded in blue. The new circle is shaded in red.

2. **On the Cartesian coordinate plane**, translate each circle with center  $C$  and radius  $r$  to the circle with center  $C'$  and radius  $r$ .  
a.  $C(1, 1)$ ,  $r = 2$  to  $C'(3, 3)$ ,  $r = 2$ . The original circle is shaded in blue. The new circle is shaded in red.  
b.  $C(1, 1)$ ,  $r = 2$  to  $C'(3, -1)$ ,  $r = 2$ . The original circle is shaded in blue. The new circle is shaded in red.  
c.  $C(1, 1)$ ,  $r = 2$  to  $C'(1, 3)$ ,  $r = 2$ . The original circle is shaded in blue. The new circle is shaded in red.  
d.  $C(1, 1)$ ,  $r = 2$  to  $C'(1, -1)$ ,  $r = 2$ . The original circle is shaded in blue. The new circle is shaded in red.

3. **Circle  $C$  has center  $C(1, 1)$  and radius  $r = 2$ . Circle  $C'$  has center  $C'(3, 3)$  and radius  $r = 2$ . The circles are shaded in blue. The new circle is shaded in red.**

4. **Circle  $C$  has center  $C(1, 1)$  and radius  $r = 2$ . Circle  $C'$  has center  $C'(3, 3)$  and radius  $r = 2$ . The circles are shaded in blue. The new circle is shaded in red.**
5. **Circle  $C$  has center  $C(1, 1)$  and radius  $r = 2$ . Circle  $C'$  has center  $C'(3, -1)$  and radius  $r = 2$ . The circles are shaded in blue. The new circle is shaded in red.**
6. **Circle  $C$  has center  $C(1, 1)$  and radius  $r = 2$ . Circle  $C'$  has center  $C'(1, 3)$  and radius  $r = 2$ . The circles are shaded in blue. The new circle is shaded in red.**
7. **Circle  $C$  has center  $C(1, 1)$  and radius  $r = 2$ . Circle  $C'$  has center  $C'(1, -1)$  and radius  $r = 2$ . The circles are shaded in blue. The new circle is shaded in red.**