 1. Create *independent variable* *x* by tapping the  tool. Tap or drag to locate *x* in the sketch. Then drag *x* around.

2. Create a *function rule* for rotation by tapping the  tool. Tap or drag to place the glowing objects: center *C* and angle *θ.*

3. Create the *dependent variable* by tapping the  tool. Attach each glowing object: *x* to *x,* *C* to *C,* and *θ* to *θ.* Point *RC,θ*(*x*) is the “rotation around *C* by *θ* of *x.”*



4. Tap the angle value to make it 180°.

**Q1** Turn on traces and vary *x* to make a shape. Draw your traces in the box on the right. Be sure to show *x, C,* and *RC,θ*(*x*).

*θ* = 180°

**Q2** Compare the speed of *x* and *RC,θ*(*x*). Which is faster, or are their speeds the same?

**Q3** On page 2 construct a rotate function using a different angle. Drag *x* to make a different shape, and draw the traces. Remember to show *x, C,* and *RC,θ*(*x*).

*θ* = \_\_\_\_°

**Q4** Drag *x* again to try to find fixed points (where *x* and *RC,θ*(*x*) come together). How many could you find, and where were they?