Constructing an Octagon
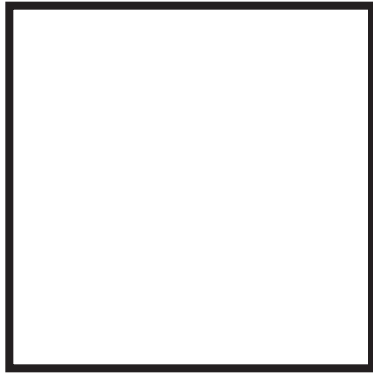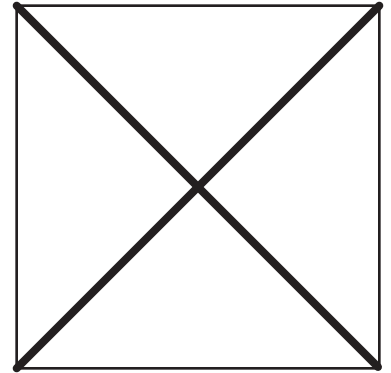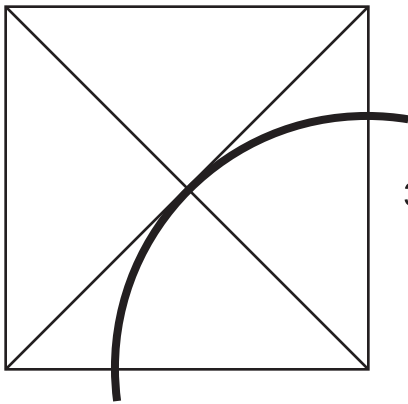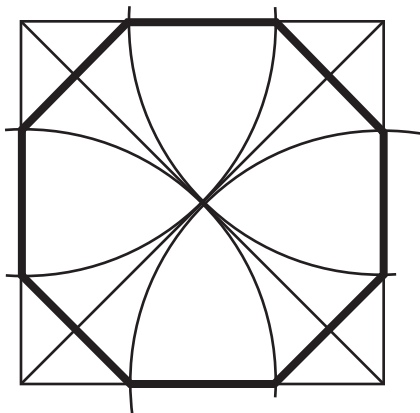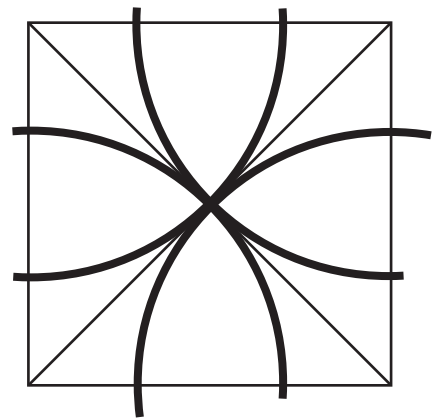
1. Construct a square first.

2. Find the center of the square by drawing diagonal lines from corner to corner to form an "x"

3. Place the point of the compass on a corner and the pencil tip at the center of the square, then draw an arc through the center point that crosses both sides as shown.

4. Repeat on each corner

5. Construct the octagon by connecting the points where the arcs intersect the square.