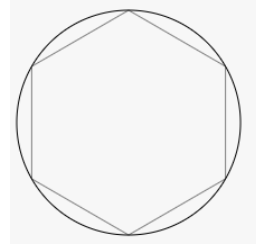
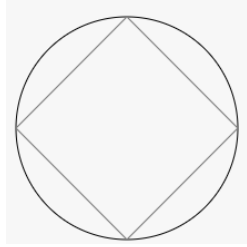
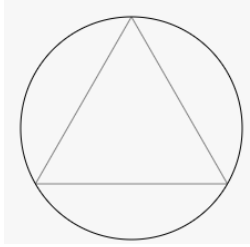


## Geometry WS 1.7 – Constructing Inscribed Polygons

Inscribed polygon – a polygon placed inside a circle with all vertices lying on the circumference of the circle.



### Constructing an inscribed Square.

1. Draw a circle using point  $O$  as the center.
2. Draw a diameter (segment passing through the center  $O$ ).
3. Construct the perpendicular bisector of the diameter draw in step 2.
4. Connect the four points where the diameters intersect the circle.

•  $O$

### Constructing an inscribed Hexagon.

1. Draw a circle using point  $O$  as the center.
2. Draw a diameter (segment passing through the center  $O$ ).
3. Set your compass to the length of the radius (distance from center to circle)
4. With the pin of the compass on each endpoint of the diameter, draw two arcs that intersect the circle.
5. Draw segments connecting the six points of intersection (vertices of the hexagon).

•  $O$

**Constructing an inscribed Equilateral Triangle.**

1. Follow the first four steps of constructing an inscribed hexagon.
2. Draw segments connecting every other vertex.



**Constructing a square given the length of the side.**

1. Construct a perpendicular passing through one of the segment endpoints (this becomes the second side of the square).
2. Copy the length of the side from each of the vertices (three times).

