CONSTRUCTION 10: Inscribing a square in a given circle.

1. Draw a circle with center $O$.
2. Draw a diameter and use construction 3 to construct another diameter perpendicular to it.
3. Join the endpoints of the diameters to form the required square.
CONSTRUCTION 11: Inscribing a regular octagon in a given circle.

1. Draw a circle with center \( O \).
2. Draw a diameter and use construction 3 to construct another diameter perpendicular to it.
3. Bisect the angles formed by these diameters, dividing the circle into eight congruent arcs.
4. The chords of these arcs are the sides of the regular octagon.
CONSTRUCTION 12: Inscribing a regular hexagon in a given circle.

1. Draw a circle with center $O$.
2. Draw diameter $AD$ and using $A$ and $D$ as centers, construct four arcs having the same radius as circle $O$ and intersecting the circle.
3. Joining the consecutive points in which these arcs intersect the circle construct the regular hexagon.
CONSTRUCTION 13: Inscribing an equilateral triangle in a given circle.

1. Draw a circle with center $O$.

2. Draw diameter $AD$ (very lightly) and using $A$ and $D$ as centers, construct four arcs having the same radius as circle $O$ and intersecting the circle.

3. Joining alternately the six points of division constructs the inscribed equilateral triangle.
CONSTRUCTION 14: Constructing a triangle similar to a given triangle.

1. You will be given $\triangle ABC$ and line segment $A'C'$.

2. On $A'C'$ using $A$ as the vertex use construction 5 to construct the angle $A'$ where $\angle A \cong \angle A'$.

3. On $A'C'$ using $C$ as the vertex use construction 5 to construct the angle $C'$ where $\angle C \cong \angle C'$.

4. Extend the other sides until they meet at $B'$. (AA similarity property guarantees that these two triangles are similar.)