Quarter-point oval

MARIAUD CONSULTING

Version AutoCAD

Drawing of a quarter-oval – AutoCAD Version

1. Principe

The AutoCAD drawing uses exactly the same construction as the hand-drawn method. Only the tools change, not the logic.

• Step 1

Action

- **Draw the segment AB (major axis)**

TOOL

- **L (LINE)**
- **Note the dimension (e.g., 120)**
- **Enter**

• Step 2

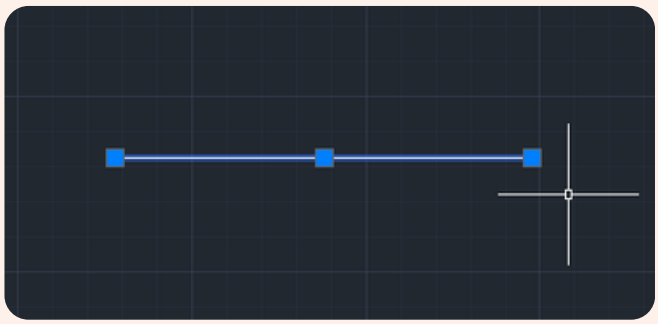
Determine the center O

- **Use the midpoint of the segment**

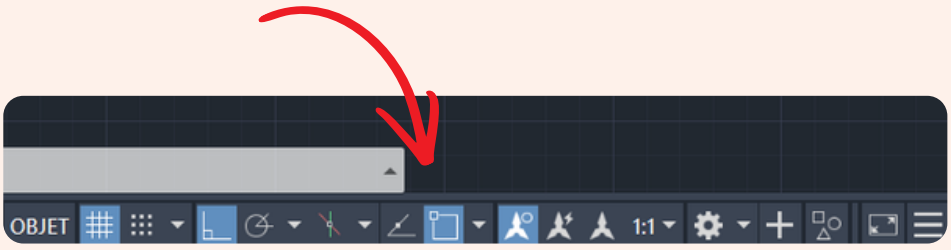
Tool

- **Object Snap: MIDPOINT**

No need for compass construction here, AutoCAD handles it directly.



Activate object snaps (F3), check Midpoint, then hover over the segment until the midpoint marker appears.



Quarter-point oval

Step 3

Draw the minor axis

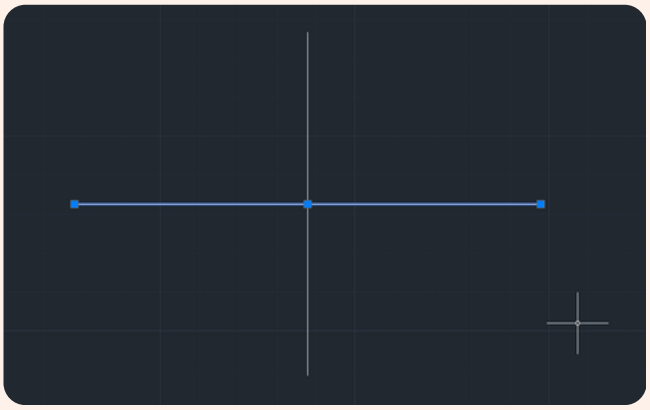
- **Draw a perpendicular line passing through O**

Tools

- **XLINE + perpendicular option**

or

- **LINE + perpendicular snap**



Step 4

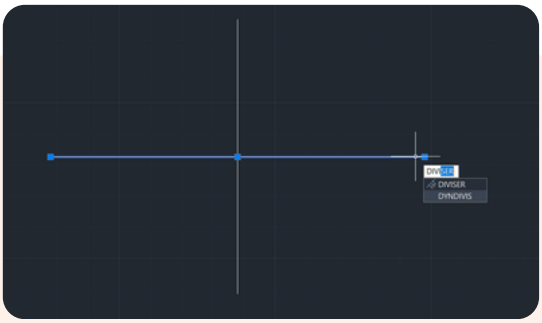
Division of the major axis

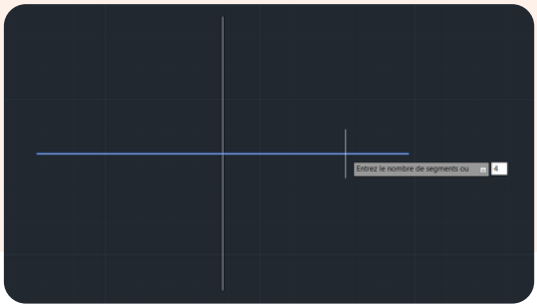
Action

- **Divide [AB] into 4 equal segments**

Simple method:

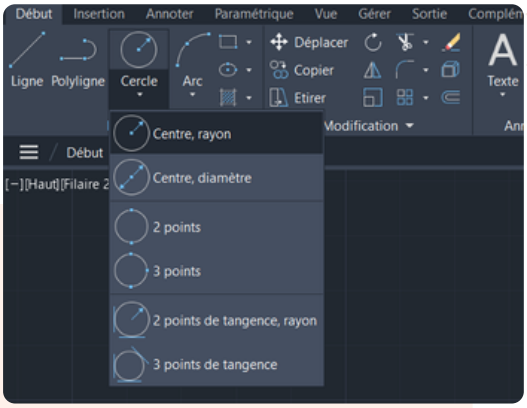
- **DIVIDE → enter 4 segments**
- **Retrieve the points with NODE snap**





Quarter-point oval

Step 5



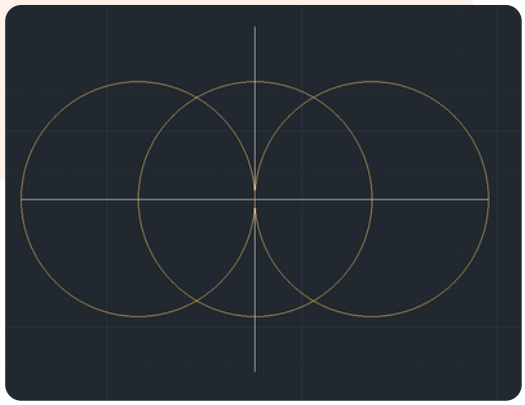
Action

- Draw the circles centered at C, O, and D with radius R

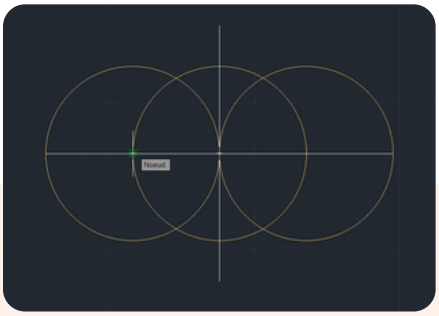
Tool

- C (CIRCLE)

Radius = distance AC



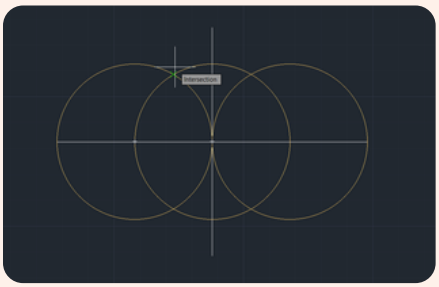
Step 6



Construction of centers I and J

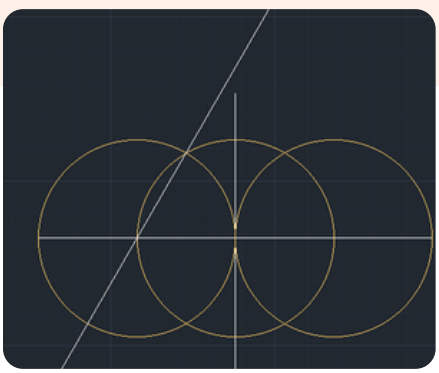
Action

- Draw the line (CE).



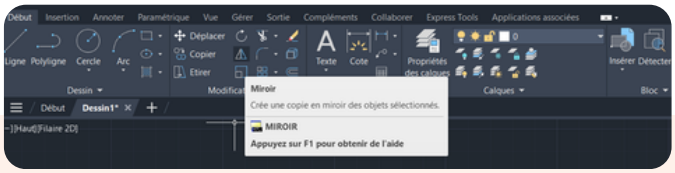
Tool

- L (LINE)
- INTERSECTION snap



Quarter-point oval

• Step 7



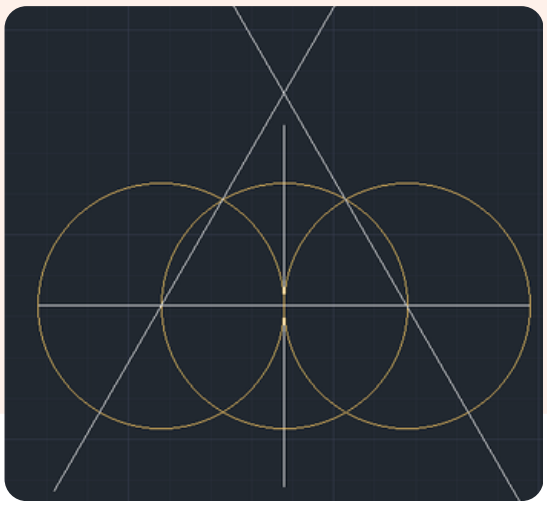
Launch the command:
MI (MIRROR)

- **Select the line (CE)**
- **Validate**

Define the symmetry axis

Use the minor axis (vertical) as reference

- **Click a point at the bottom**
- **Then a point at the top**



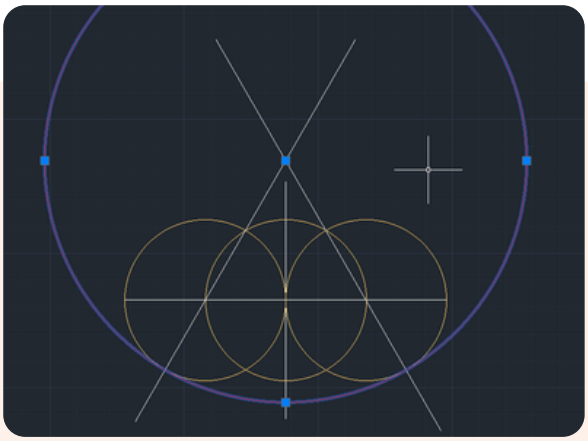
• Step 8

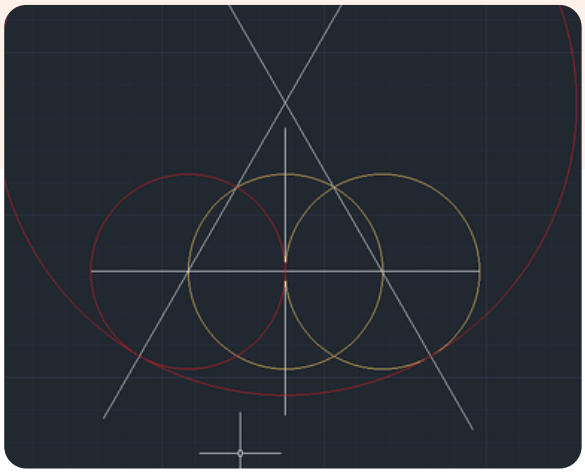
Drawing the main arcs

Draw the arcs centered at I and J, with a radius equal to 3R

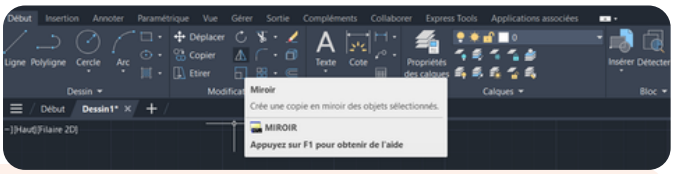
Possible tools

- **ARC (center / start / end)**





Quarter-point oval

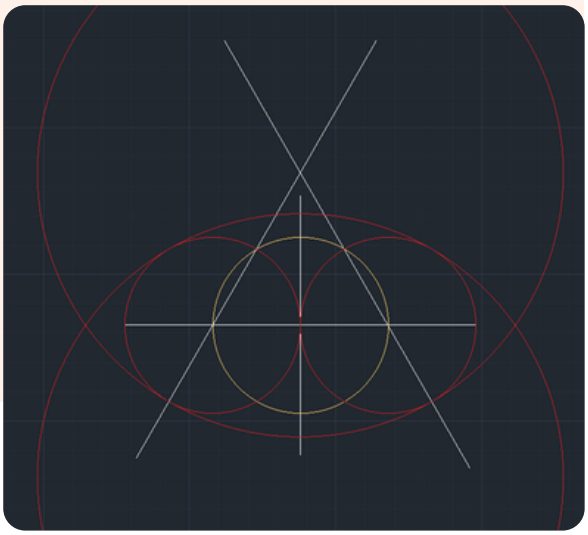


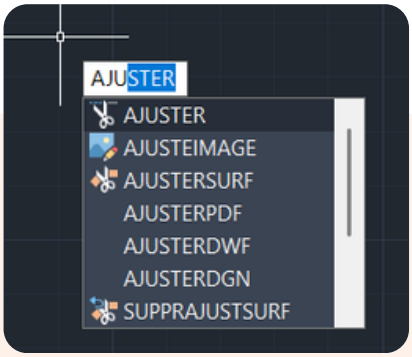
• Step 9

Apply a symmetry relative to the minor axis

Command :
MI (MIRROR)

- **Select :**
  - **Large circle**
  - **Small circle**
- **Define the symmetry axis (minor axis)**
- **Answer No to “erase source object”**





• Step 10

The arcs are intentionally drawn in full, then trimmed to keep only the parts necessary for the oval shape.

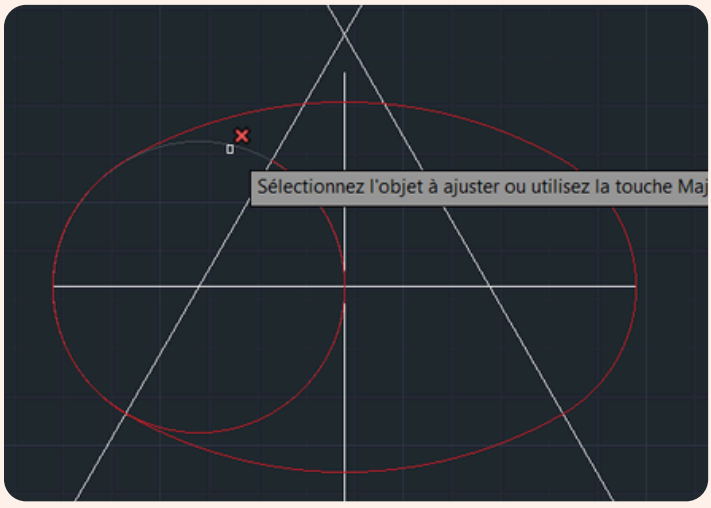
Using the command:
TRIM (or TR)

Selection of boundaries:

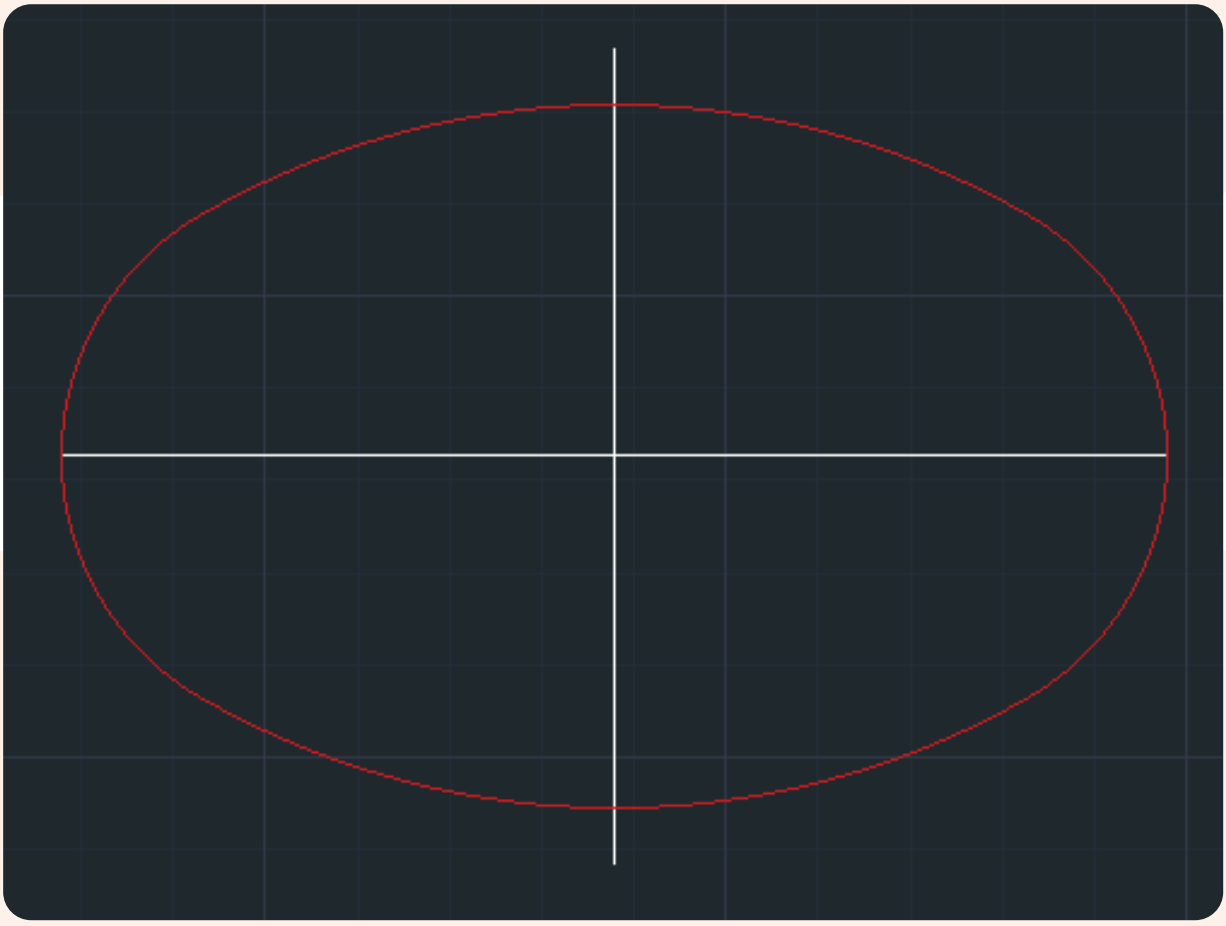
- **Select the elements that serve as cutting edges**
- **Validate**

Trimming

- **Click on the parts of the circles to be removed**
- **AutoCAD automatically cuts the unnecessary segments.**



Quarter-point oval



The axes structure the construction, and the arcs connect to them to form a regular and controlled oval.

It is up to you to put this into practice and perfect your expertise!