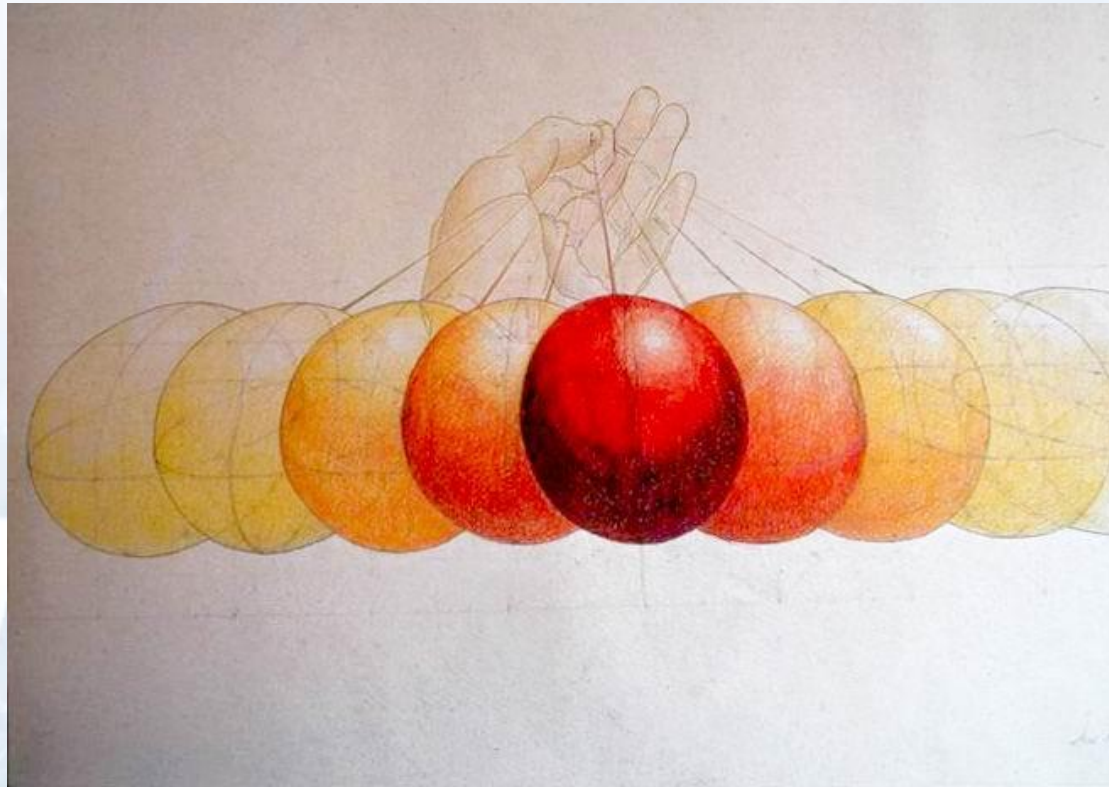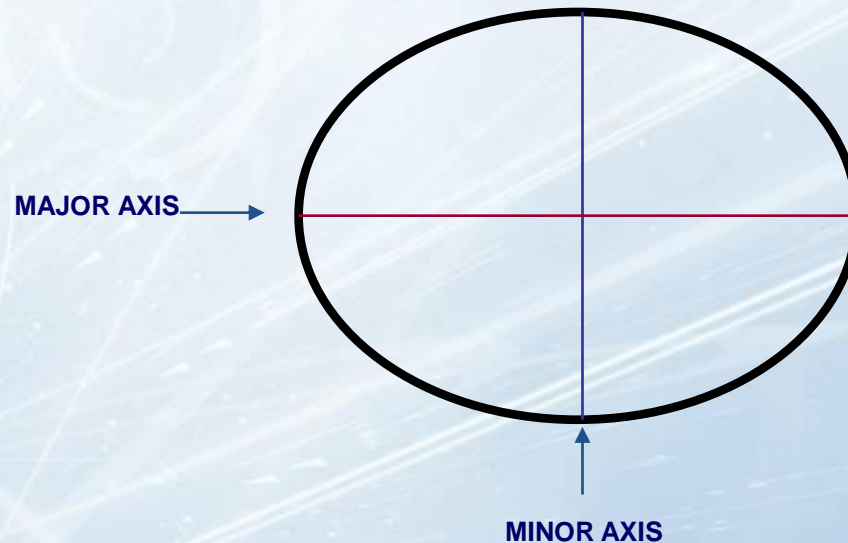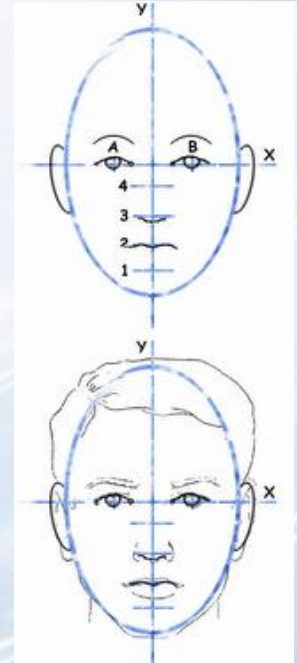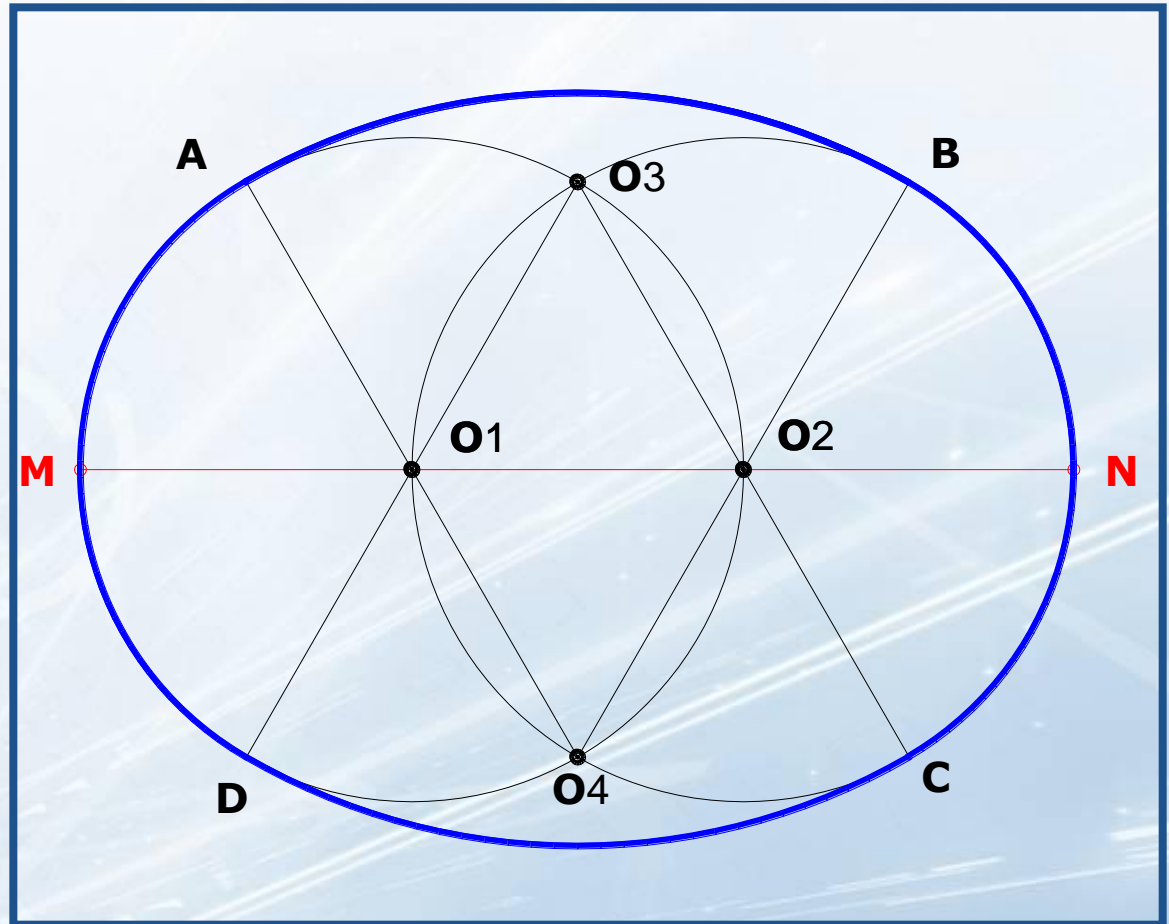# TECHNICAL CURVES

OVAL

The OVAL is a flat and closed curve, symmetric to its perpendicular axes, and made of four arcs, two of them are equal and longer than the other two.

MAJOR AXIS →

MINOR AXIS

1- Divide the segment MN into three equal parts, obtaining points O1 and O2.

2- With center at O1 and O2, trace the circumferences whose radius are O1-M and O2-N.

3 These two circumferences intersect at point O3 and O4.

4- Join O3 and both O1 and O2 with a rect, which cuts the circumferences at C and D points.

5- With center at O3 and distance O3- D or C trace the arc DC.

Join O4 and both O1 and O2 through a rect, which cuts the circumferences at points A and B.

6- With center at O4 and distance A or B trace the arc AB.

http://www.educacionplastica.net/zirkel/ovaloEjeMayor_sol.html

ST is the minor axis of the oval.

1- Draw a circumference of diameter ST and trace its perpendicular diameter "m" obtaining points O1, O2, O3, O4.
2- Trace the rects:
  O4-O1
  O4-O3
With center at O4 and distance O4-O2 trace the arc BC
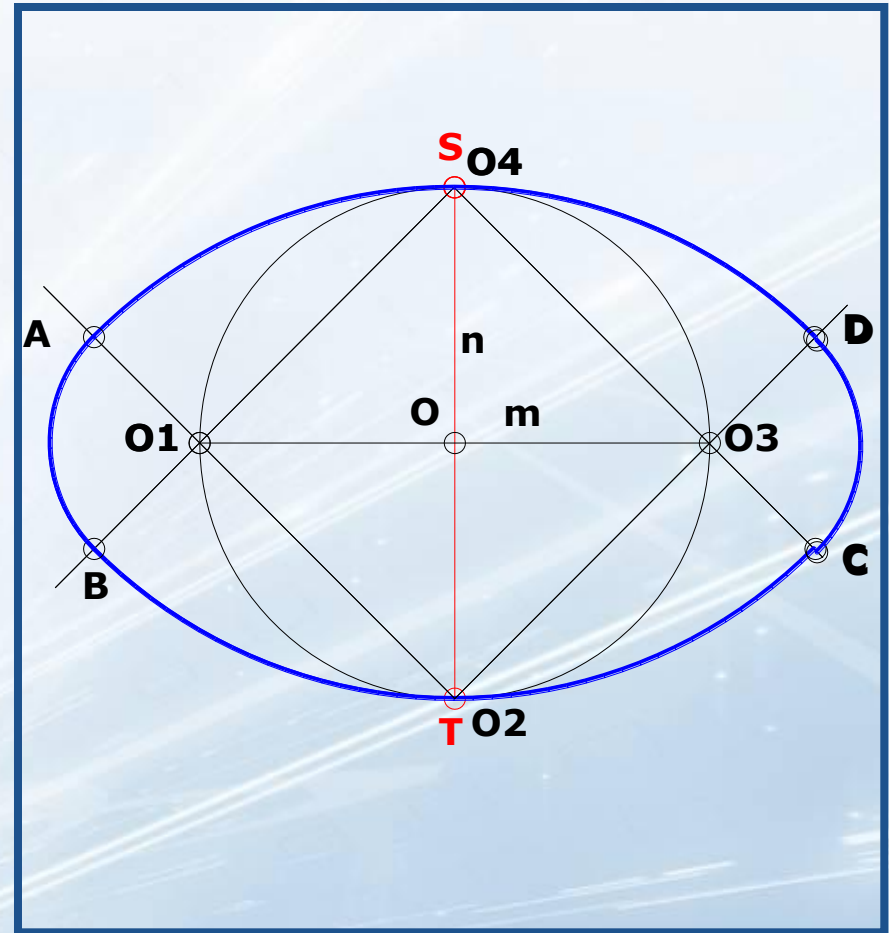3- Trace the rects :
  O2-O3
  O2-O1
With center at O2 and distance O2-O4 trace the arc AD
 4- With center at O1 and distance O1-A trace the arc AB
5- With center at O3 and distance O3-D trace the arc DC.

http://www.educacionplastica.net/zirkel/ovaloEjeMenor_sol.html

OVOID

The OVOID is a flat and closed curve, symmetric only in respect to its major axis, and made of four arcs, two of them are equal and longer than the other two. For this reason the ovoid is egg shaped.
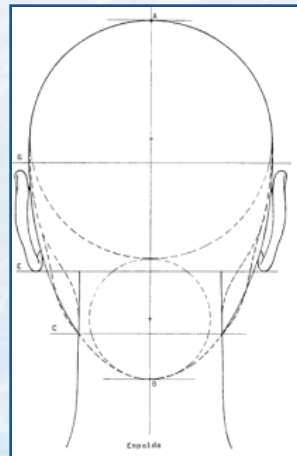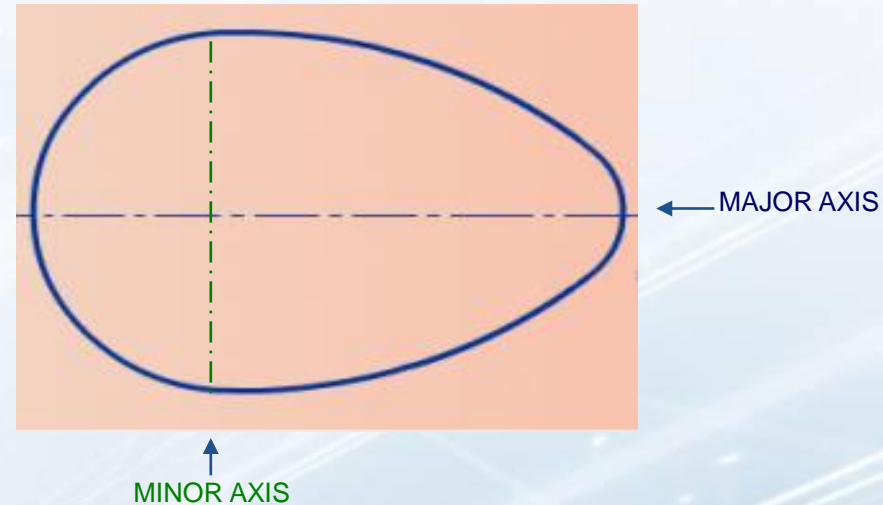
MAJOR AXIS

MINOR AXIS

The minor axis is the segment ST

1- Find the middle point of the diameter and draw a circumference whose center is point O1.

2- Draw the perpendicular rect to ST.

3- Trace the rects O3-O2 and O4-O2.

4. With center at T and distance T-S trace the arc S-A.

5. With center at S and distance S-T trace another arc T-B.

6- With center at O2, trace the arc A-B.

http://www.educacionplastica.net/zirkel/ovoideEjeMenor_sol.html
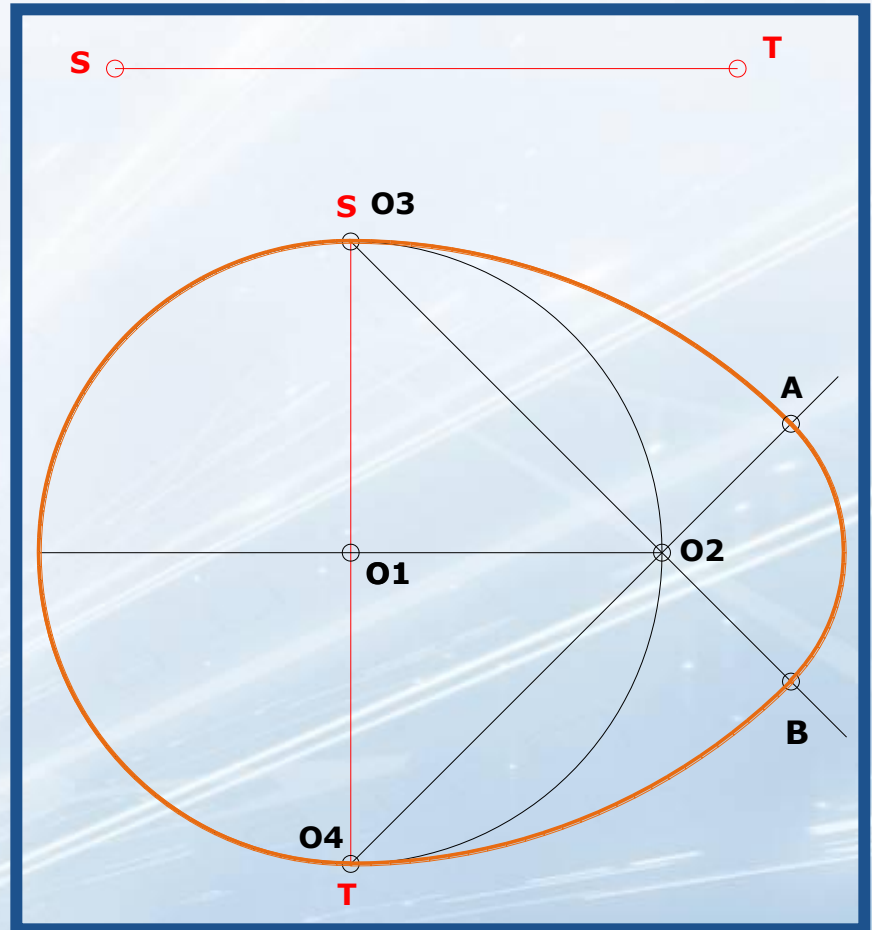
The rect MN is the Ovoid major axis.

1- Divide that rect into six equal parts. Name point 2 as O3, and point 5 as O4.
2- Trace the perpendicular to MN troughpoint O3.
3- With center at O3 and radius O3-M trace a semicircumference until it cuts that perpendicular at points A and B.
4-With center at O3 and radius O3-N trace a semicircumference until it cuts the perpendicular at points O1 y O2.
5-Trace the rects O1-O4 and O2-O4
6- With center at O2 and distance O2-A, and center at O1 and distance O1-B trace the arcs AC y BD. These cut the rects at points C and D.
7- With center at O4 and radius O4-N trace the arc CD.

http://www.educacionplastica.net/zirkel/ovoideEjeMayor_sol.html
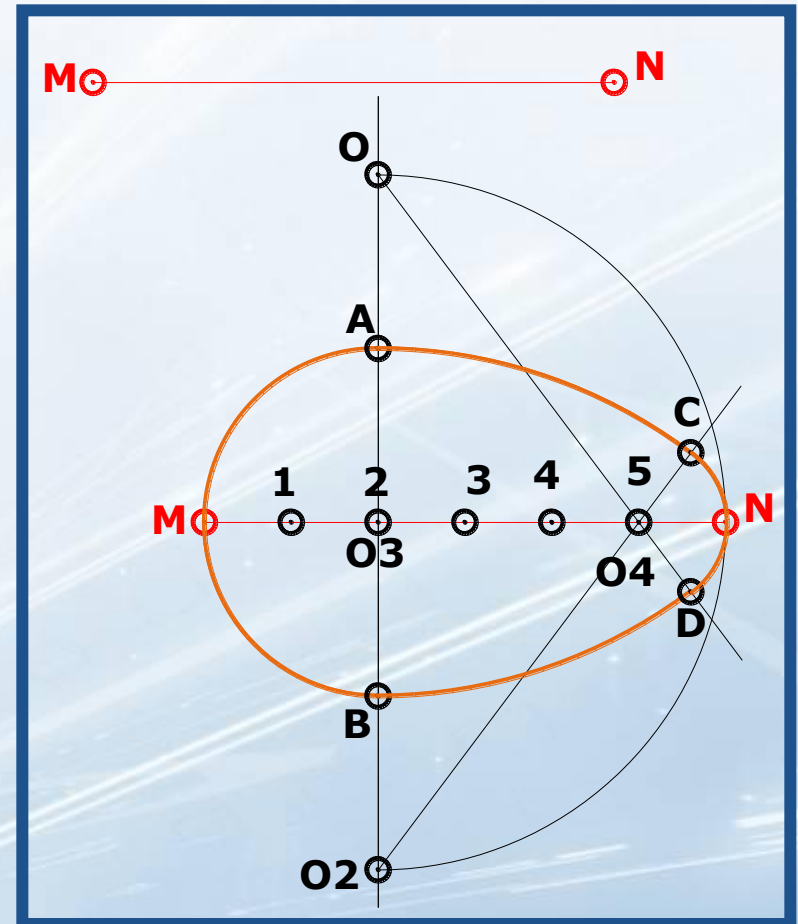
SPIRAL CURVES

A spiral is a curved line which expands at a constant distance from a central core
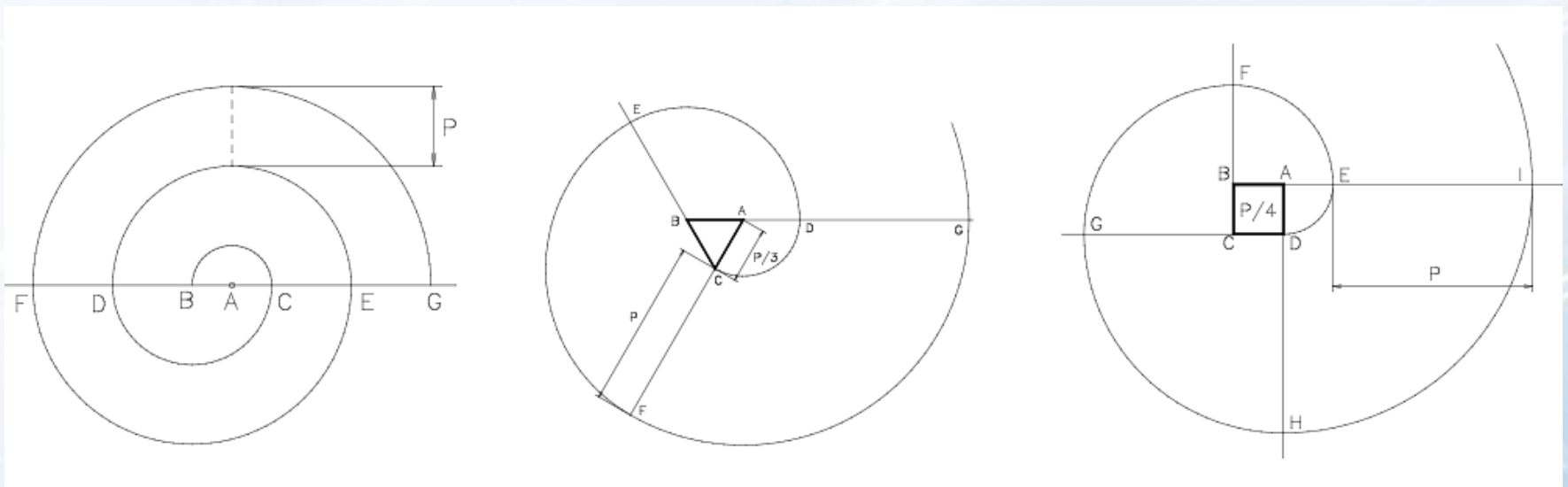
TWO POINTS SPIRAL   **THREE POINTS SPIRAL**   **FOUR POINTS SPIRAL**

Trace a rect and two points A and B
Draw the segment bisector of the
segment AB. It results the middle
point M.

1: With center at M and distance M-A,
trace an arc.
2: With center at A and distance A-B,
trace an arc, and this cuts the initial
rect at point C.
3: With center at B and distance B-C,
trace another arc which cuts the rect
at D point.
4: With center at C-D, trace an arc
which cuts the rect at point E.

Repeat this process as many times as
arcs are required.
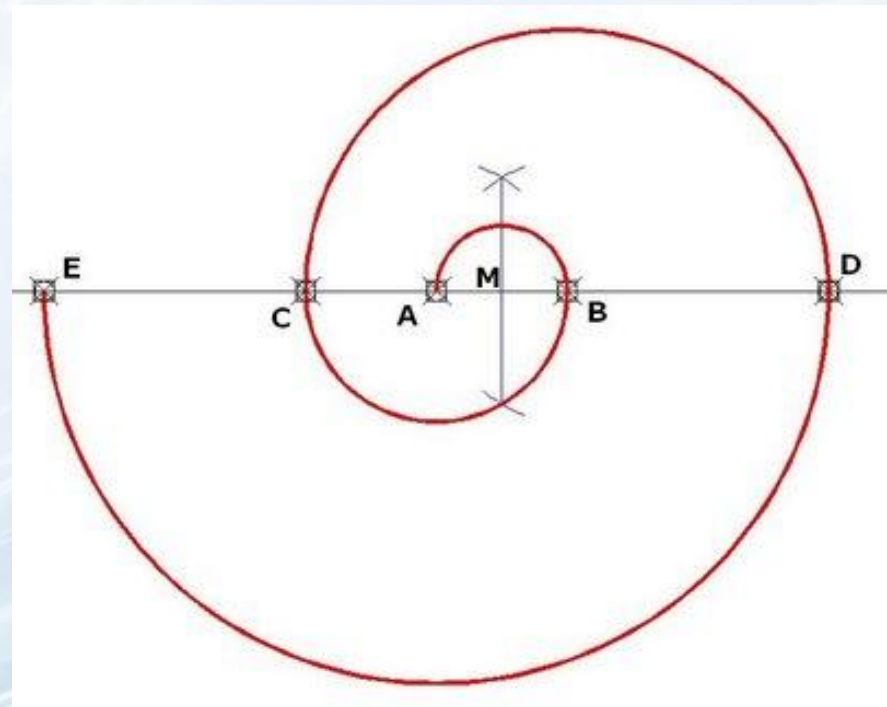
Draw a triangle and make longer its sides.

1: with center at point A and distance A-C, trace an arc. This arc cuts the one triangle side at point D.
2: with center at B and distance B-D, trace an arc which cuts another side of the triangle at point E.
3: with center at C and distance C-E trace an arc which cuts the triangle side at point F.
4: with center at A and distance A-F trace another arc, and this one will cut the triangle side at point G.

Repeat this process as many times as arcs are required.
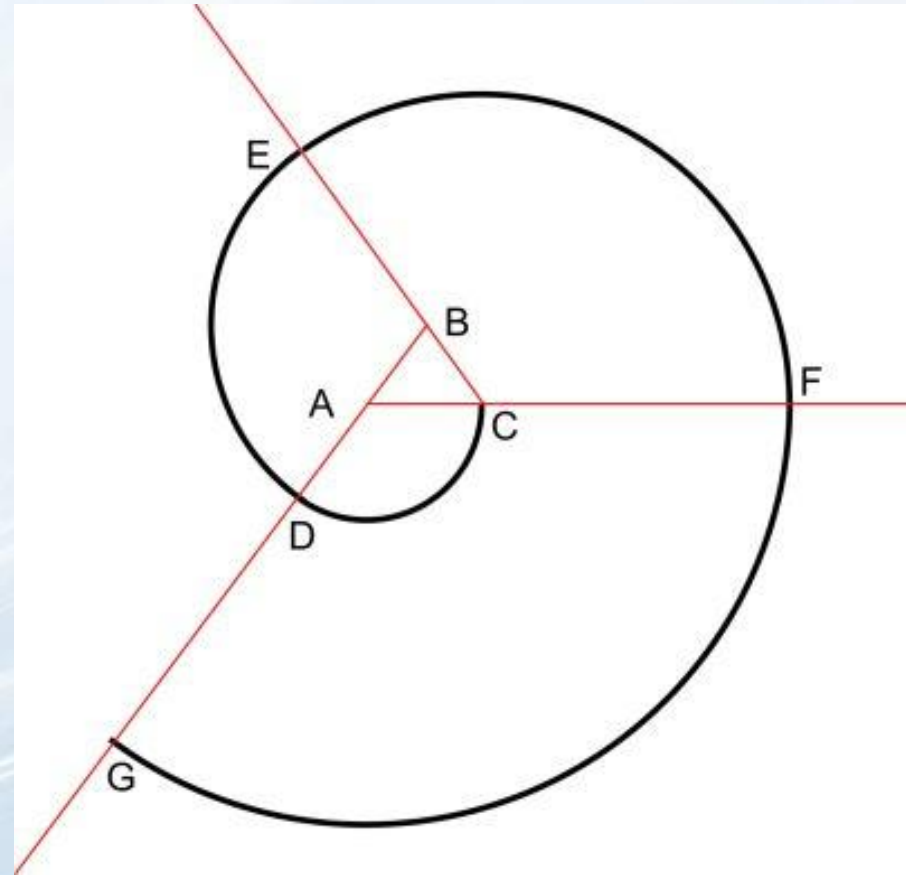
Construct a square and make longer each side of it.

1: with center at M and radius M-O, trace an arc which cuts one square side at point R.

2- with center at N and radius N-R, trace an arc which cuts the square side at point S.

3- with center at next vertex P, and radius P-S , trace another arc that will cut one square side at point T.

4: with center at O and radius O-T, trace an arc wich cuts another side at point U.

Repeat the process as many times as arcs are required.

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