Creo Sketcher Practice

Part 1

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Armin Steinke
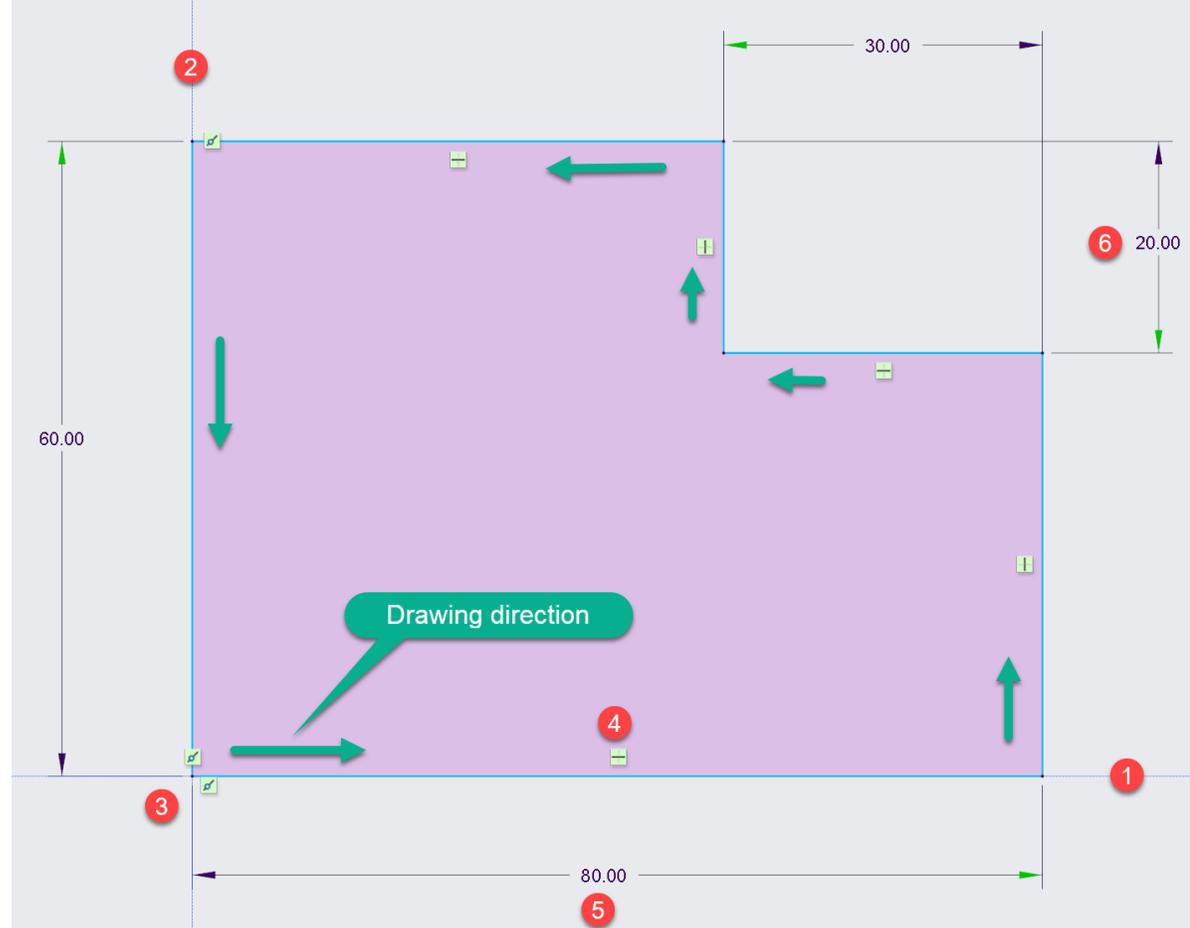
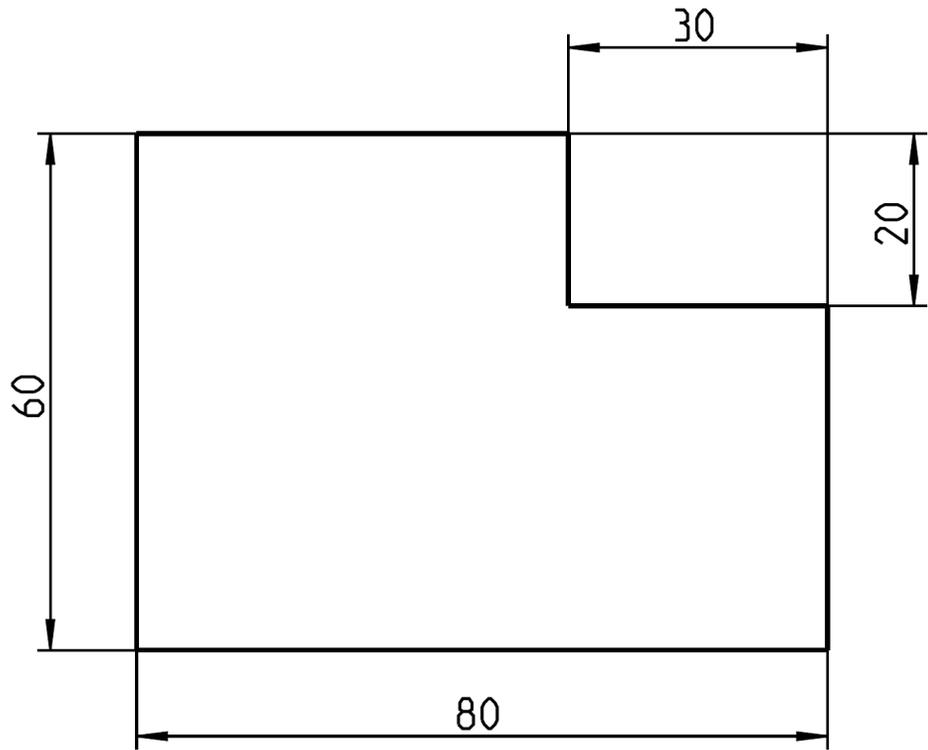Hochschule Karlsruhe
Technik und Wirtschaft
UNIVERSITY OF APPLIED SCIENCES
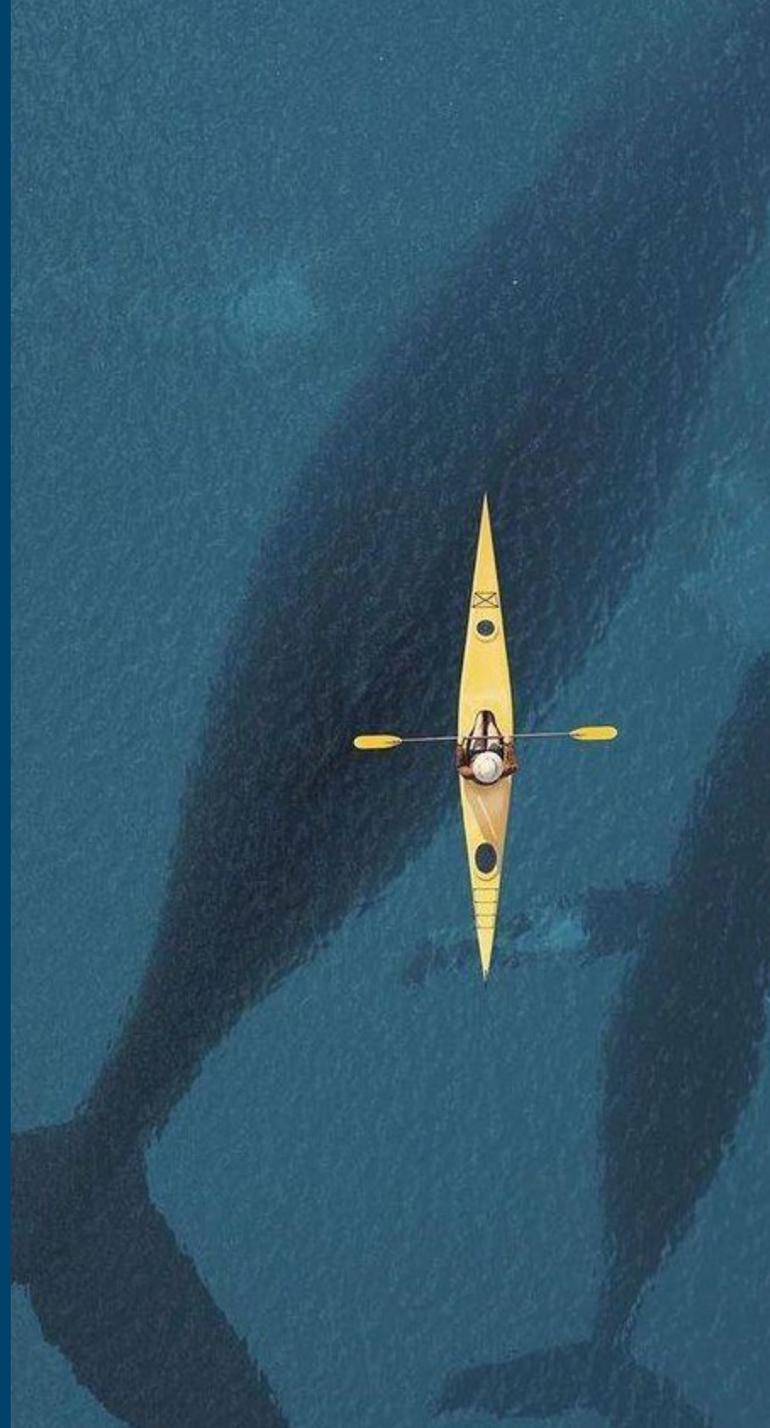
Sketch-01: Technical Drawing
Basic Chain and Dimension

Drawing direction

	Workflow in CREO
1	Horizontal reference
2	Vertical reference
3	Sketch origin and startpoint
4	Automatically generated constraint
5	Automatically generated dimension
6	Manually generated dimension

Sketch-02: Technical Drawing
Basic Chain and Dimension
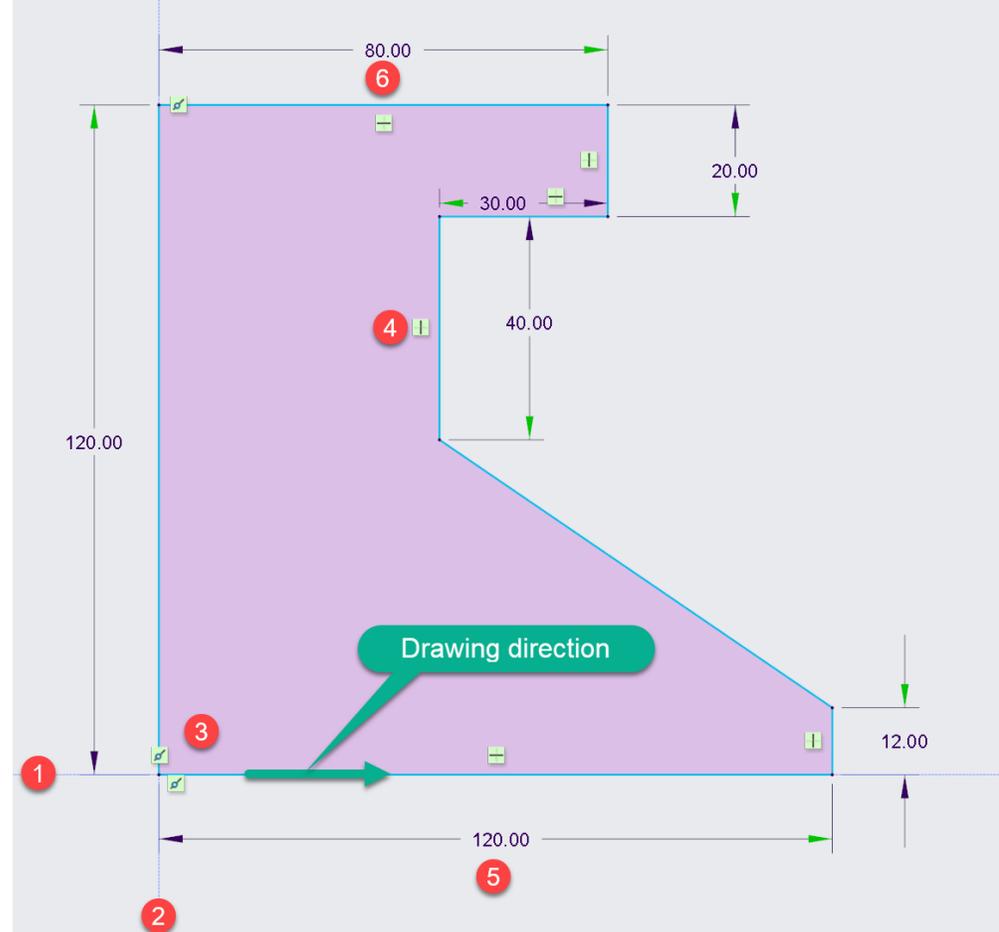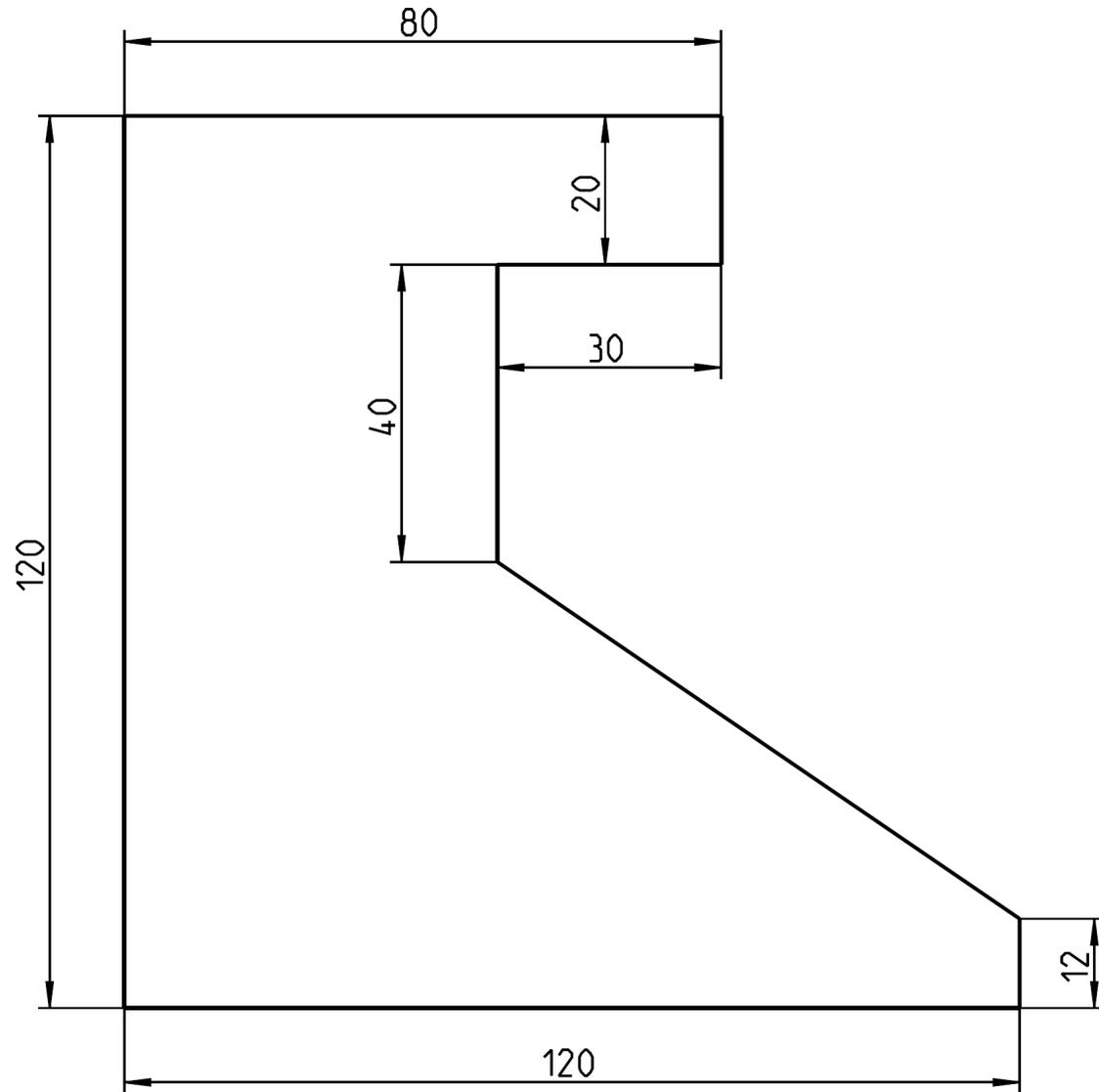
Drawing direction

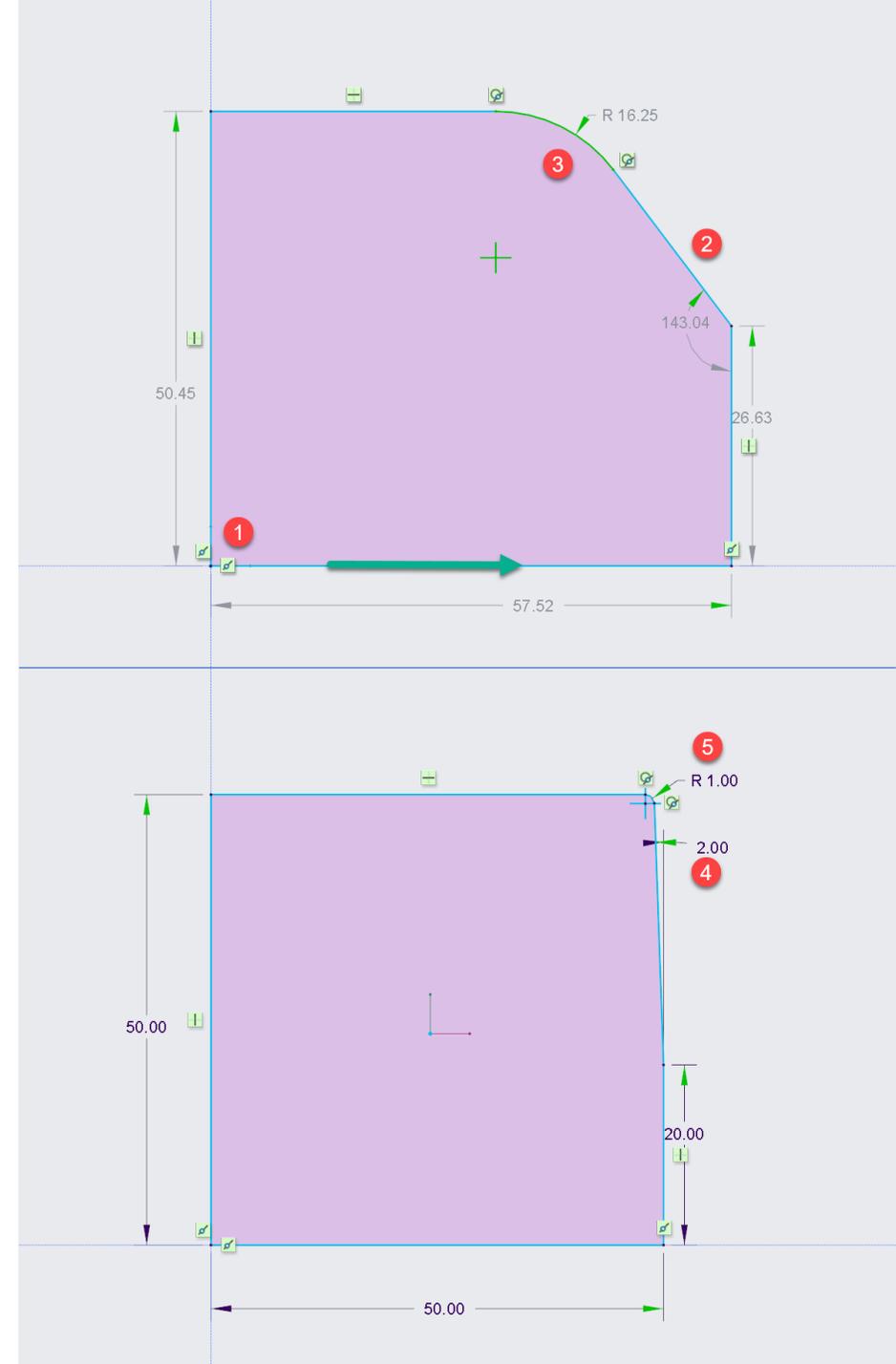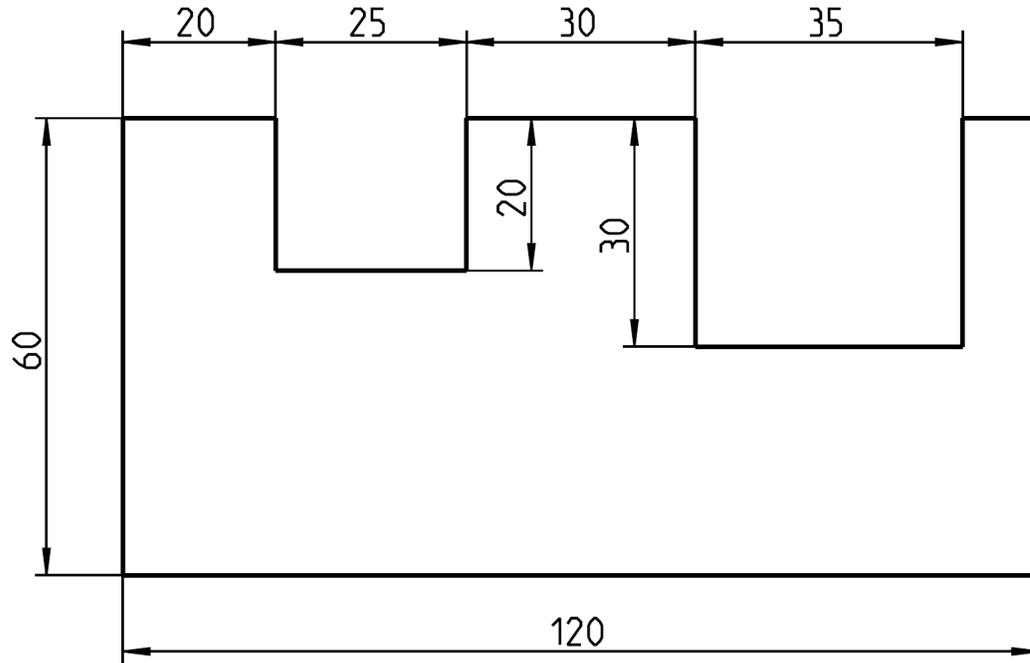| Workflow in CREO	
1	Horizontal reference
2	Vertical reference
3	Sketch origin and startpoint
4	Automatically generated constraint
5	Automatically generated dimension
6	Manually generated dimension

Sketch-03: Technical Drawing
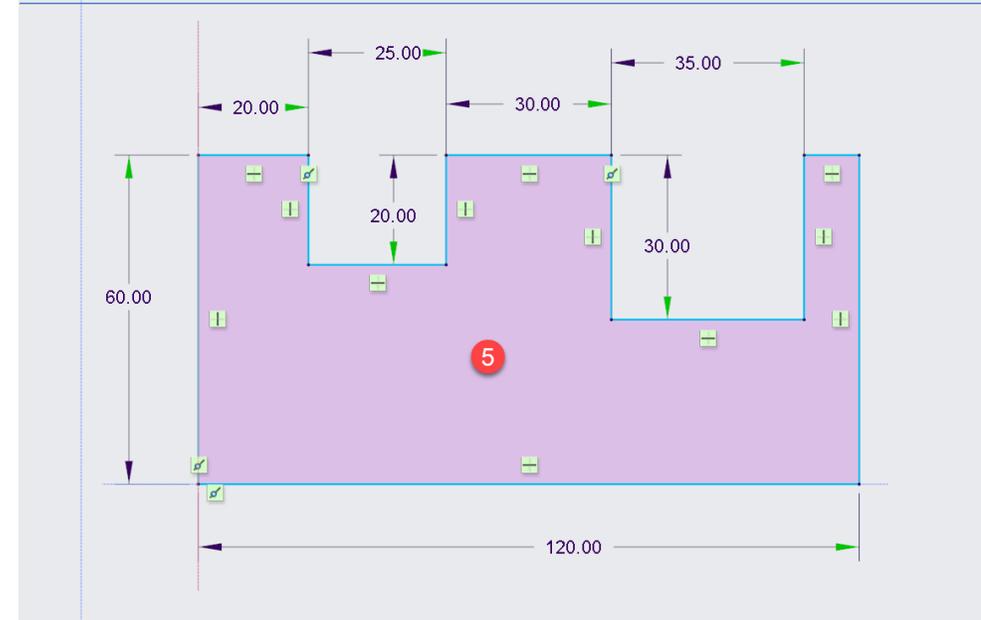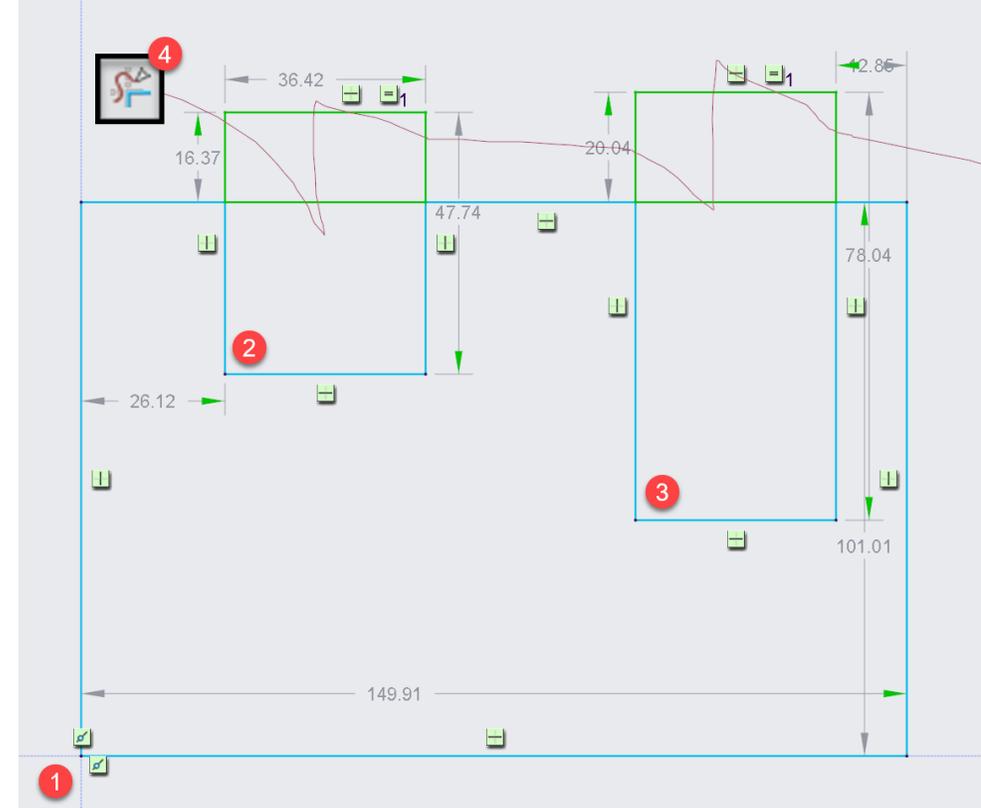## Sketch with „close to sth." dimensions
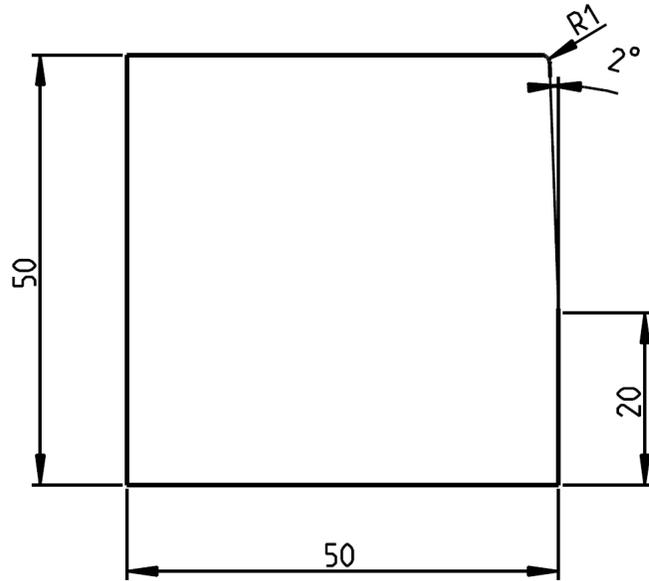
	Workflow in CREO
1	Starting in sketch origin
2;3	Draw line chain with excessive dimensions
4;5	Change dimensions to correct values

Sketch-04: Technical Drawing
Rectangle and Trim-funcion

	Workflow in CREO
1	Rectangle starting in sketch origin
2	2. Rectangle
3	3. Rectangle
4	Trim with trace
5	Modify + generate dimensions

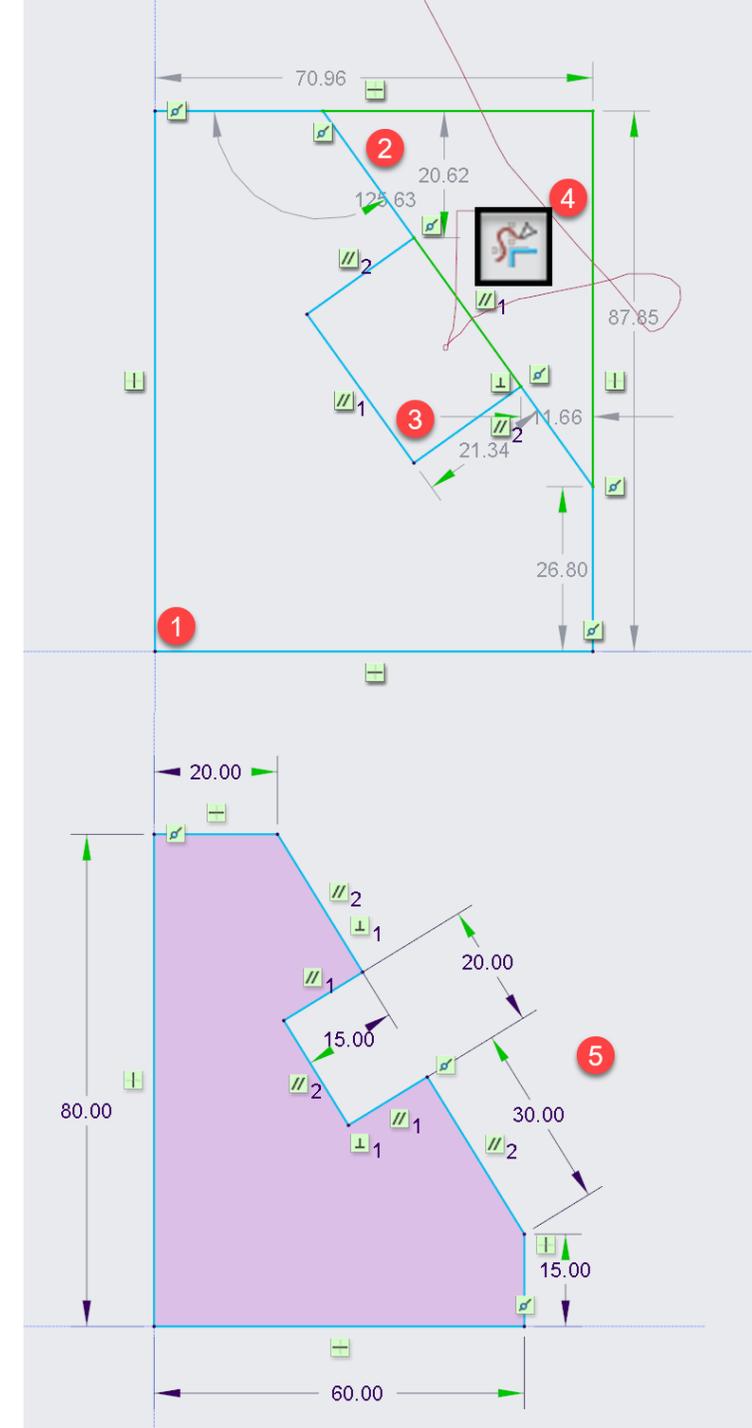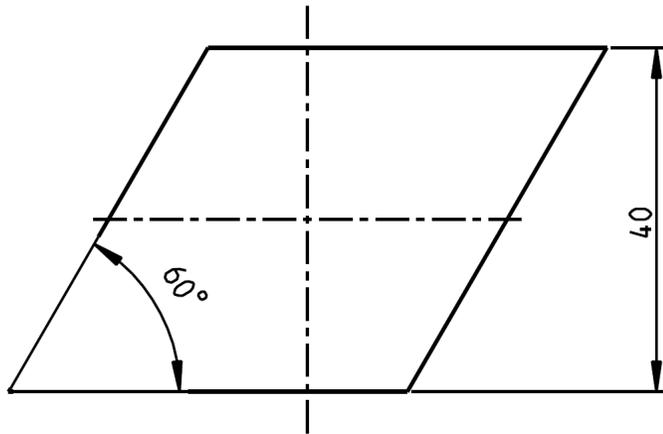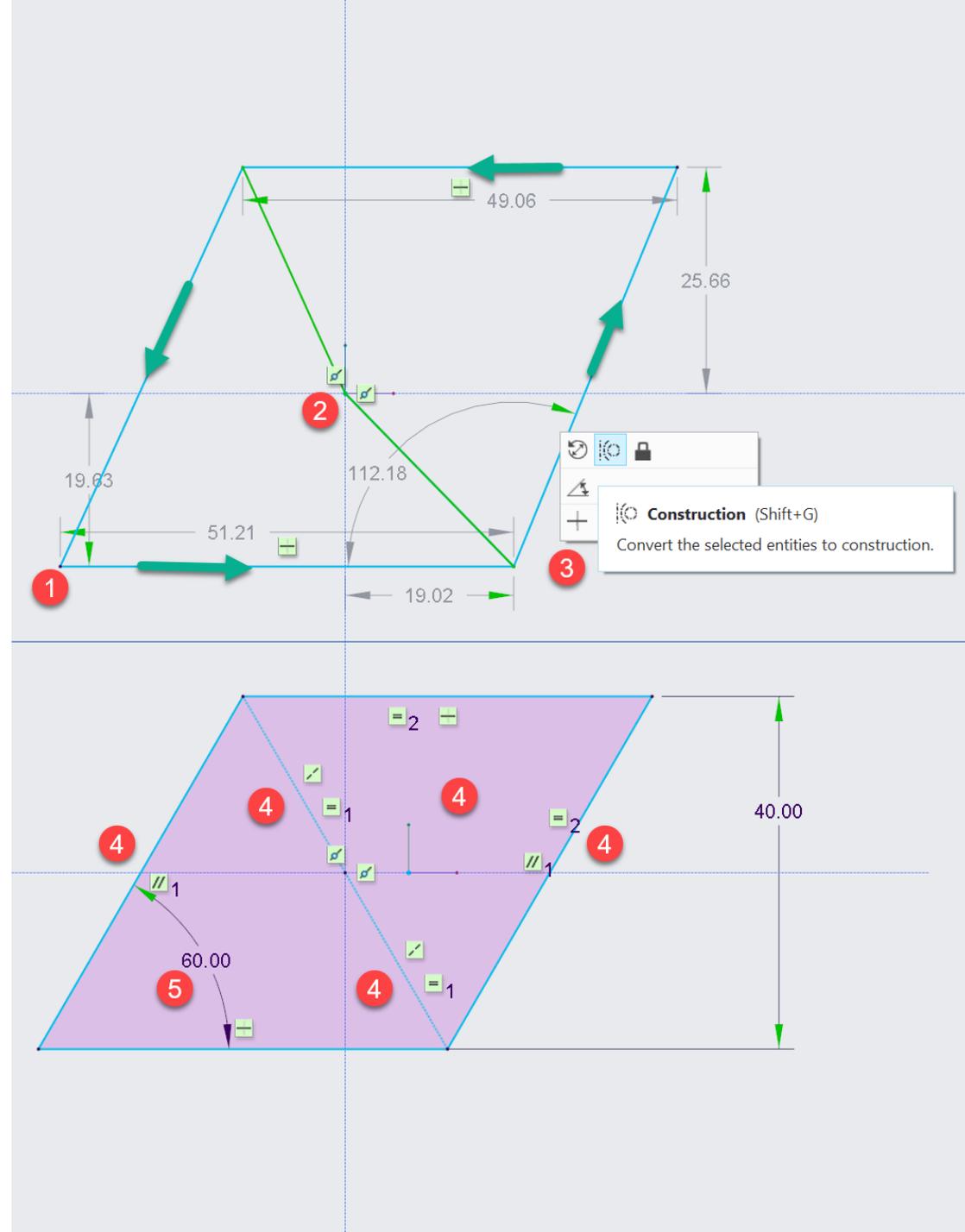Sketch-05: Technical Drawing
Tilted Rechtangle
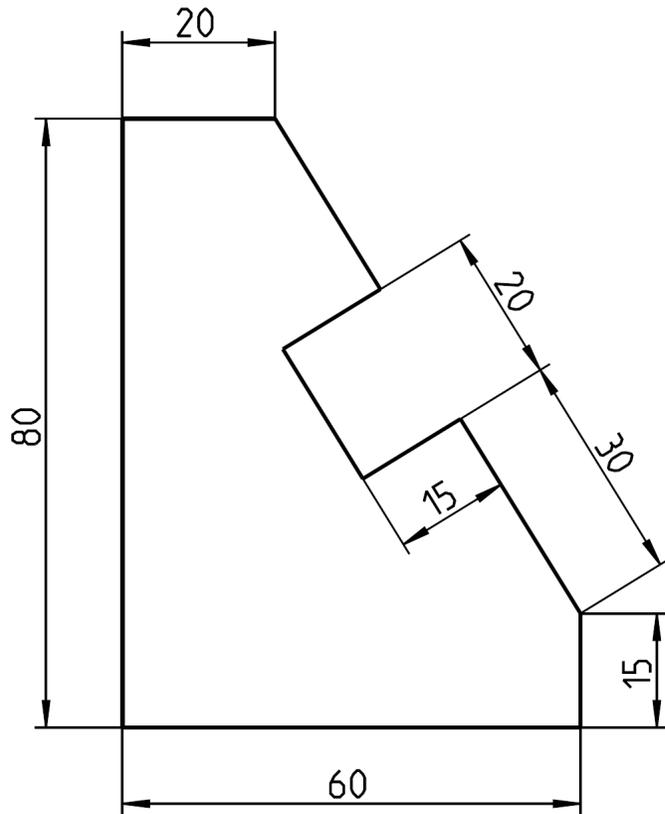
Workflow in CREO
1 Rectangle starting in sketch origin
2 Draw line
3 Tilted rectangle
4 Trim with trace (2x)
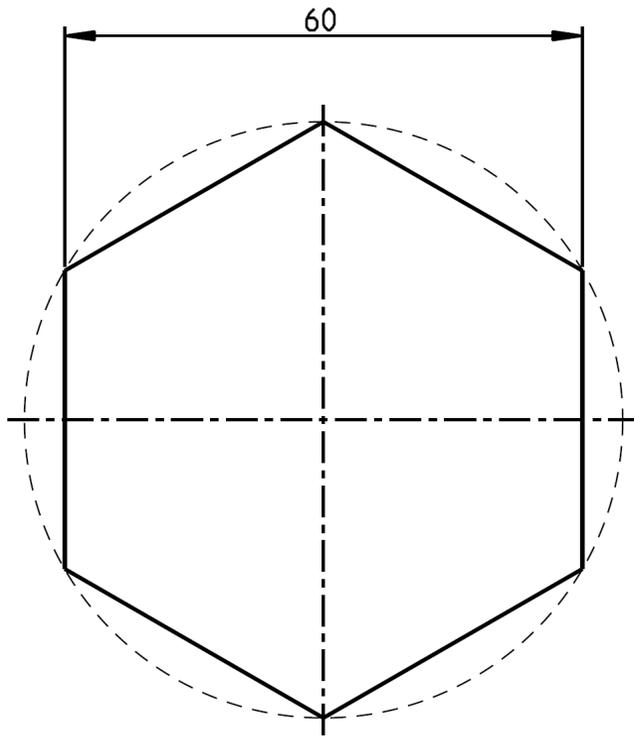5 Modify + generate dimensions

Sketch-06: Technical Drawing Guidelines and Constraints

Workflow in CREO

1. Draw roughly a parallelogram
2. Draw guidelines
3. Convert into construction lines
4. Add constraints
5. Modify + generate dimensions
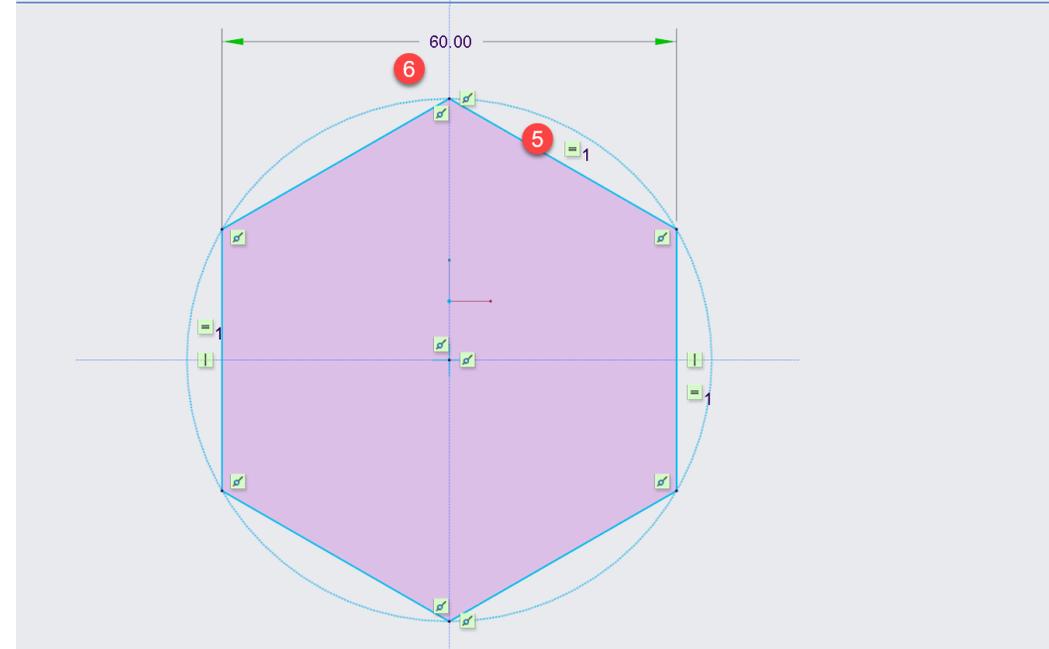
Sketch-07: Technical Drawing Guidelines and Constraints

Workflow in CREO

1	Circle starting in sketch origin
2	Draw line chain
3	Use appearing constraints
4	Convert circle in construction line
5	Add constraints until only ONE dimension is left
6	Modify dimension

Construction (Shift+G)
Convert the selected entities to construction.
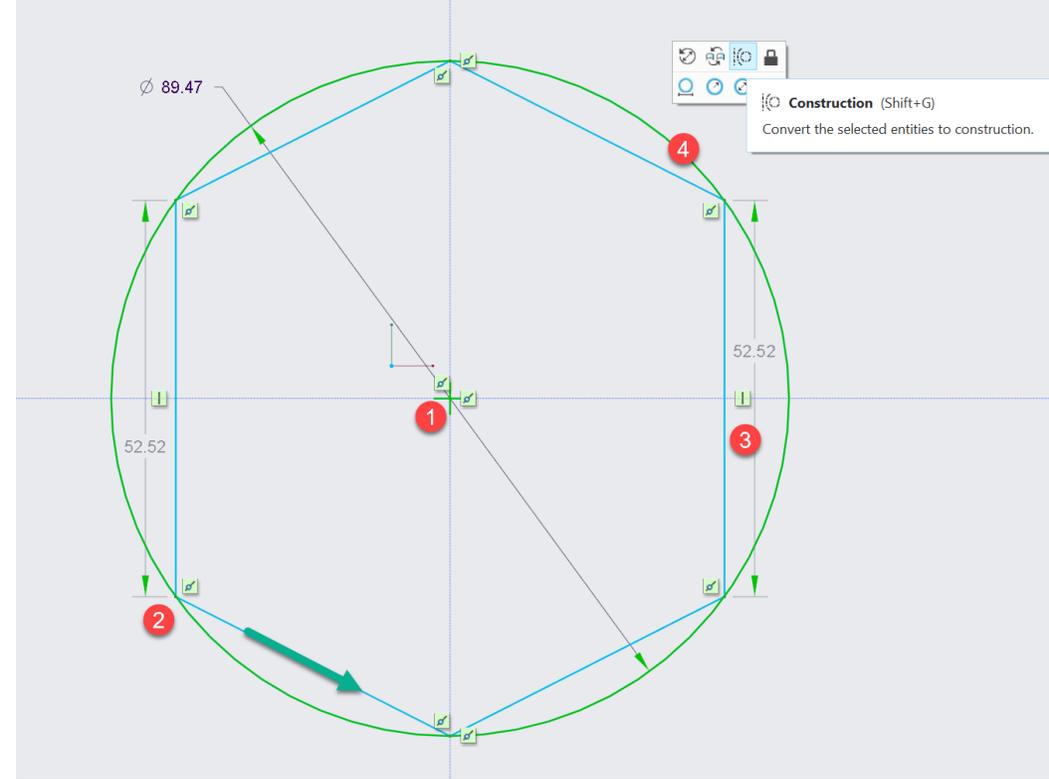
Sketch-08: Technical Drawing
Tangent Line and Construction Circle

Ø10

60°

30

R8

Ø30
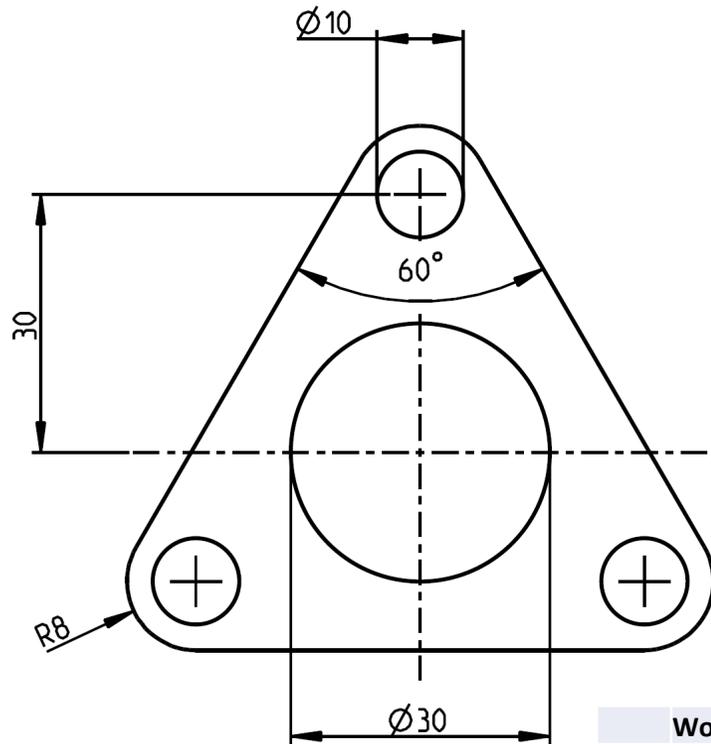
	Workflow in CREO
1	Circle starting in sketch origin
2	Draw circles
3	Draw **tangent** lines
4	Trim with „mouseclick"
5	Create/convert circle in construction line
6	Add constraints
7	Create/modify dimensions
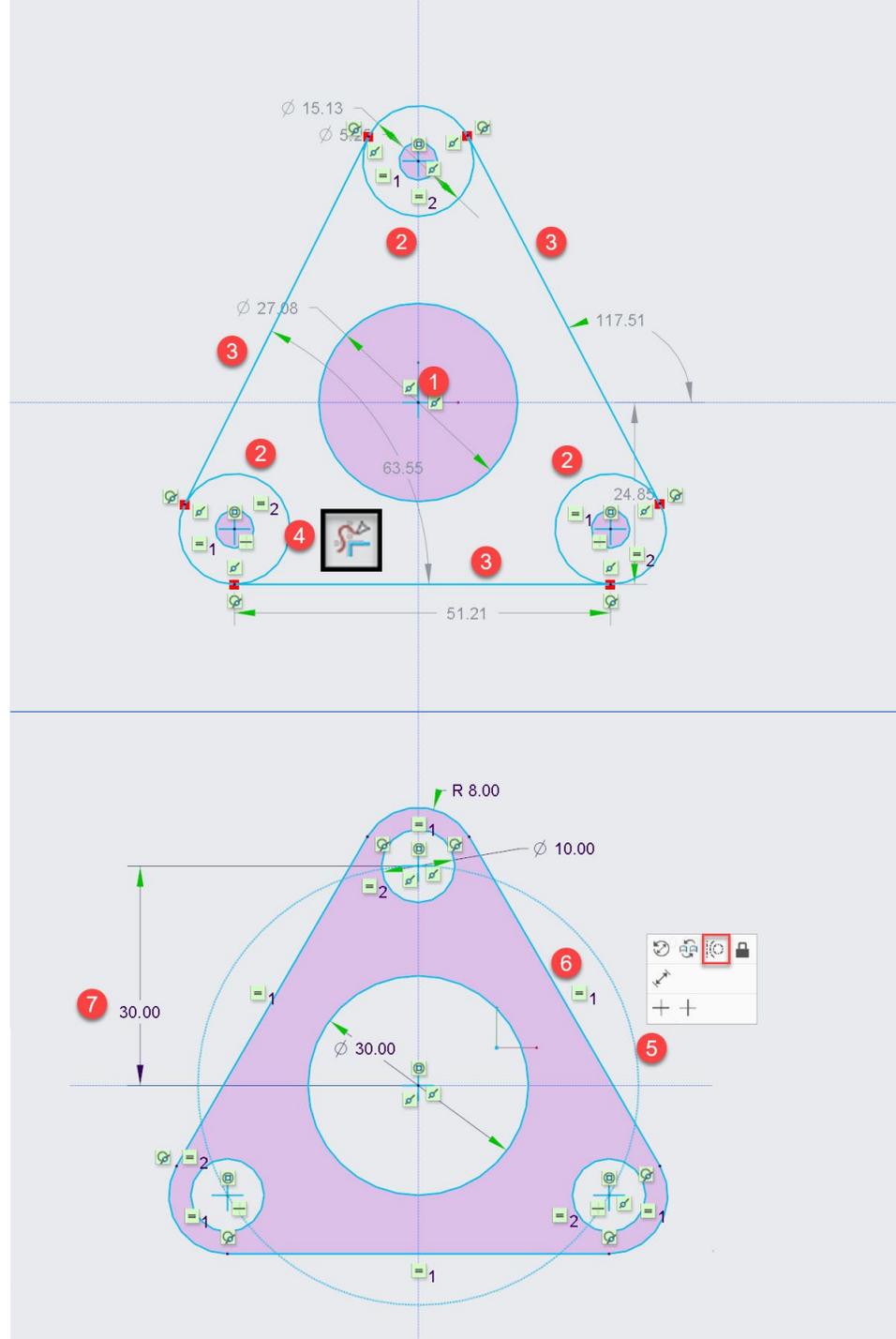
Sketch-09: Technical Drawing Symmetry in Sketch
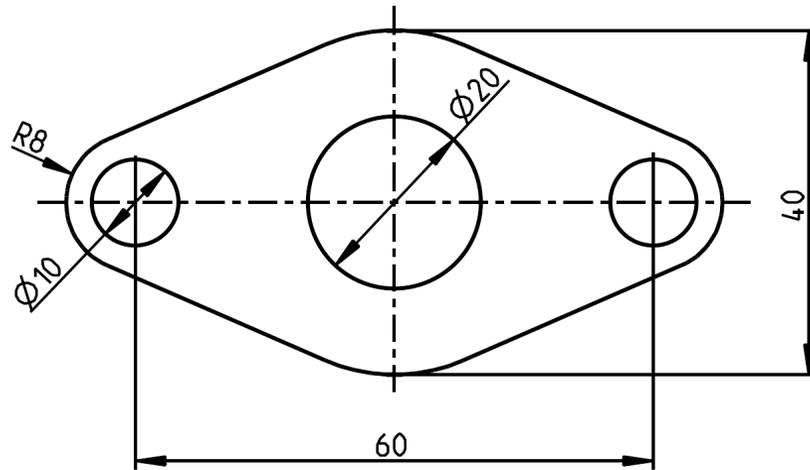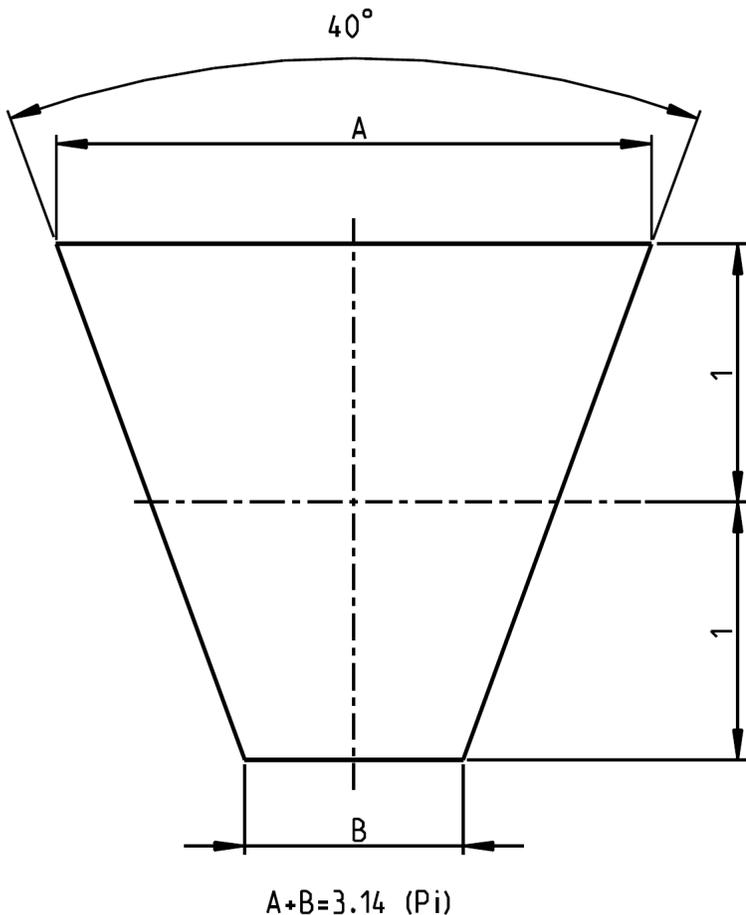

	Workflow in CREO
1	Circles and tangent Line
2	Draw Center-Lines
3	Trim with trace
4	Select all
5	Mirror horizontally
6	Select all and Mirror vertically
7	Add and modify dimension
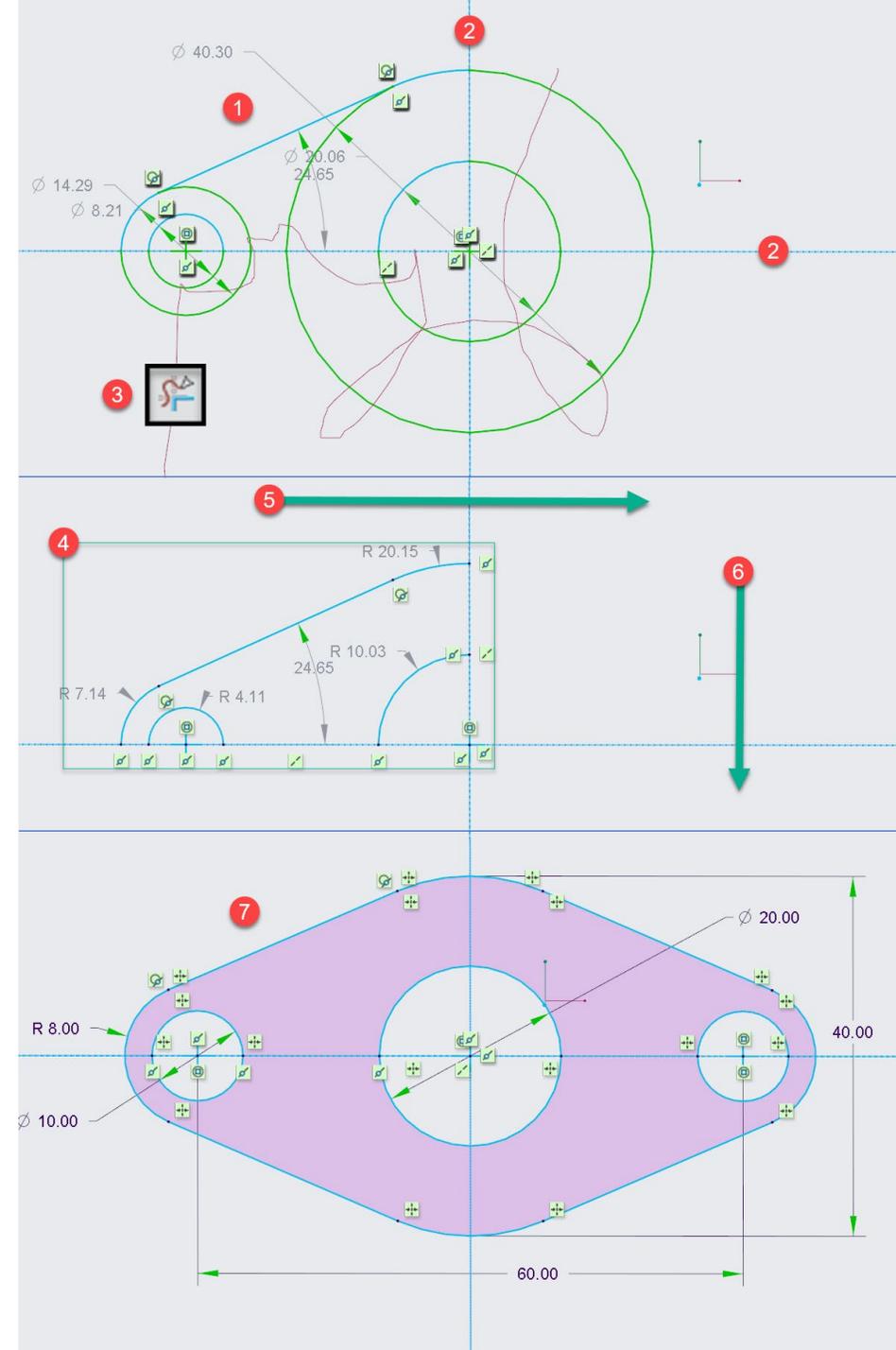
Sketch-10: Technical Drawing
Reference Profile of an Involute Gear DIN 867
Rescale Sketch
Constraints instead of Mathematics

40°

A

B

A+B=3.14 (Pi)

Workflow in CREO

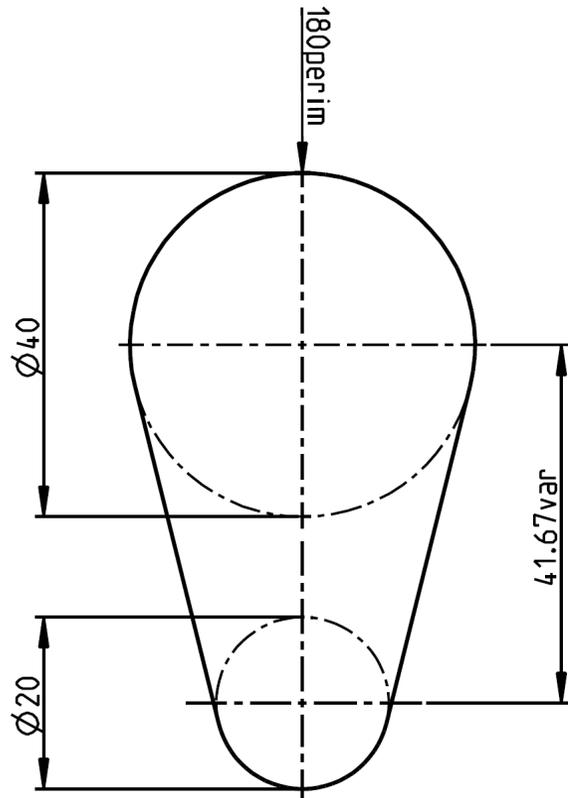|	
1	Center line for symmetrie
2	Select all
3	Modify dimensions
4	Enter desired value (Lock Scale!!)
5	Place dimensions
6	Add constraints
7	Change into construction line

Sketch-11: Technical Drawing

The perimeter dimensioning is used to determine
eg. the center distance for a given circumference

	Workflow in CREO
1	Draw contour
2	Add two construction circles 20 / 40
3	Generate center distance dimension
4	Activate all contour lines (nothing else)
5	Select Perimeter Dimensioning
6	Pick center distance dimension (it turns variable now)
7	Change perimeter value to 180
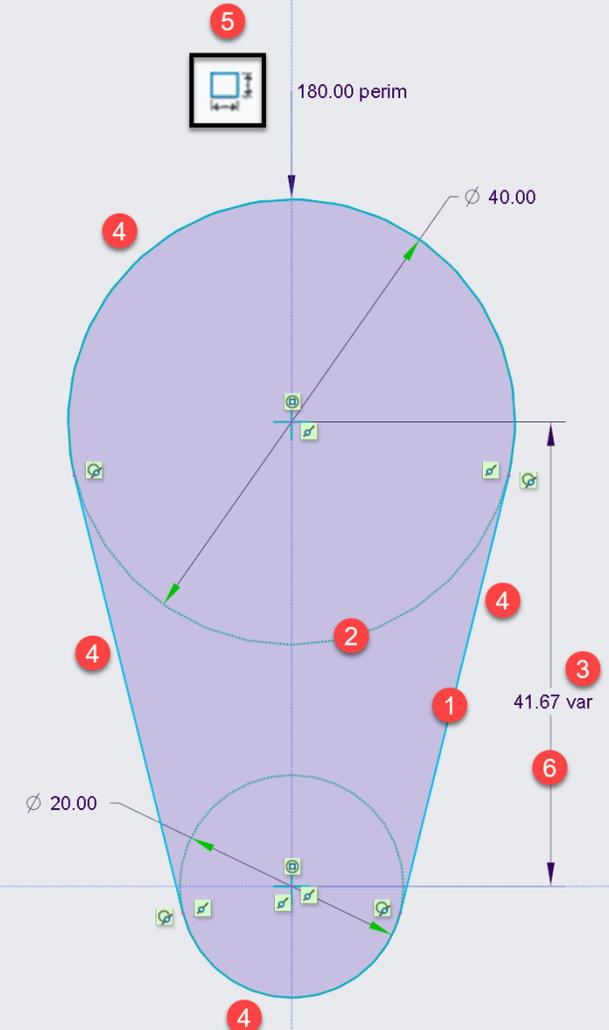
Sketch-12: Technical Drawing
Sketch with line offset
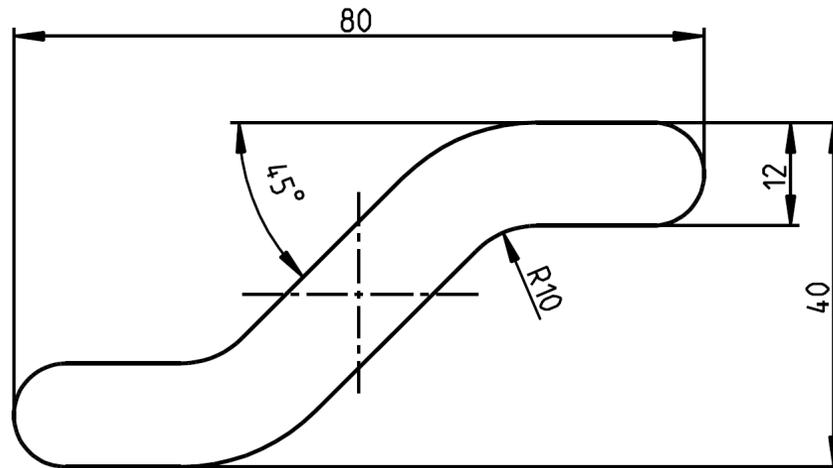
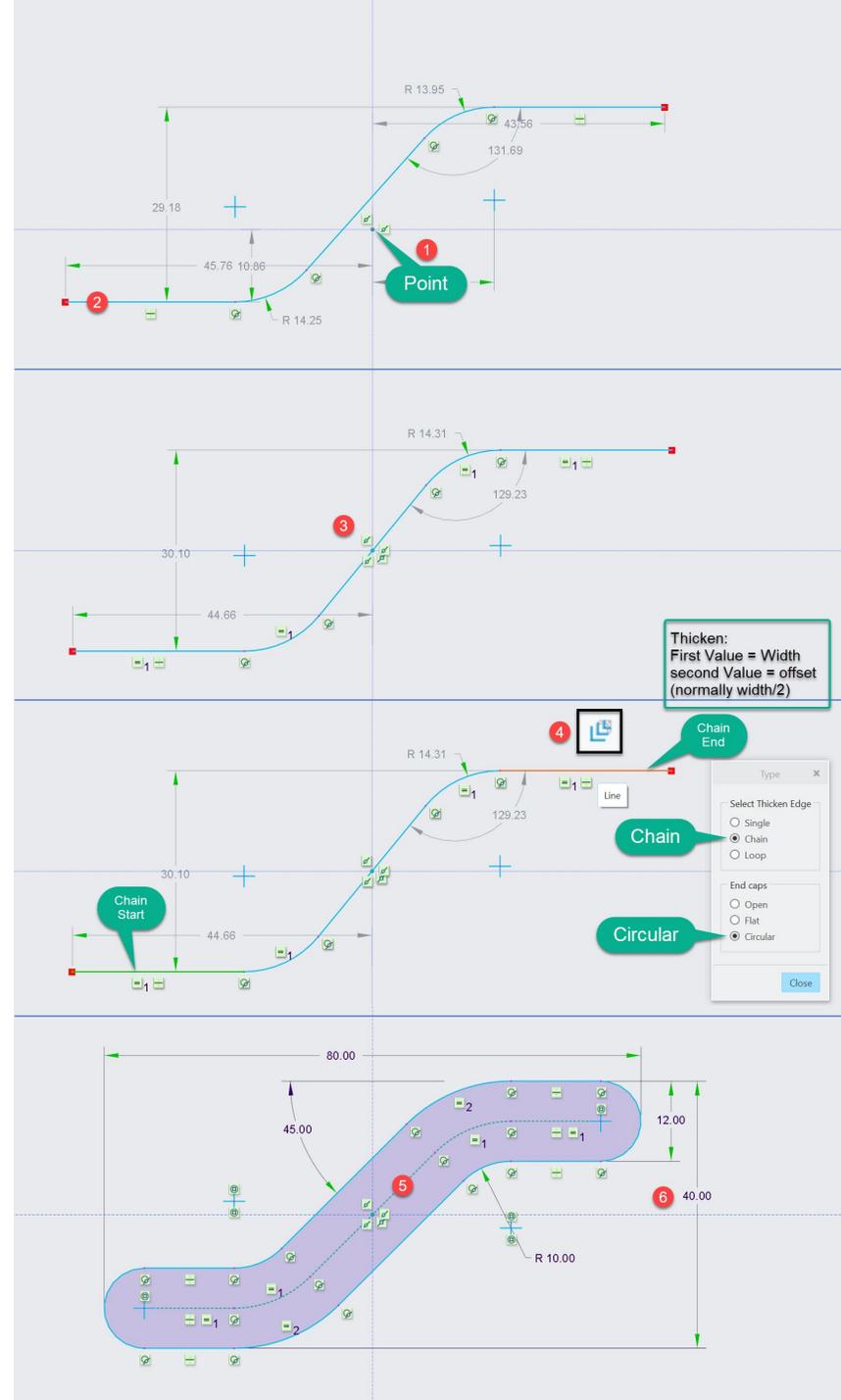|	Workflow in CREO
1	Draw Point in Origin
2	Draw path-line (Do NOT create „Strong" dimensions)
3	Add constraints (use also „midpoint")
4	Add Thicken-Feature (Chain+Circular Ends) select „from-to" line segments
5	Convert path-line to construction-line
6	Add and modify dimensions

Sketch-13: Technical Drawing
Advanced constraints: Orbiform
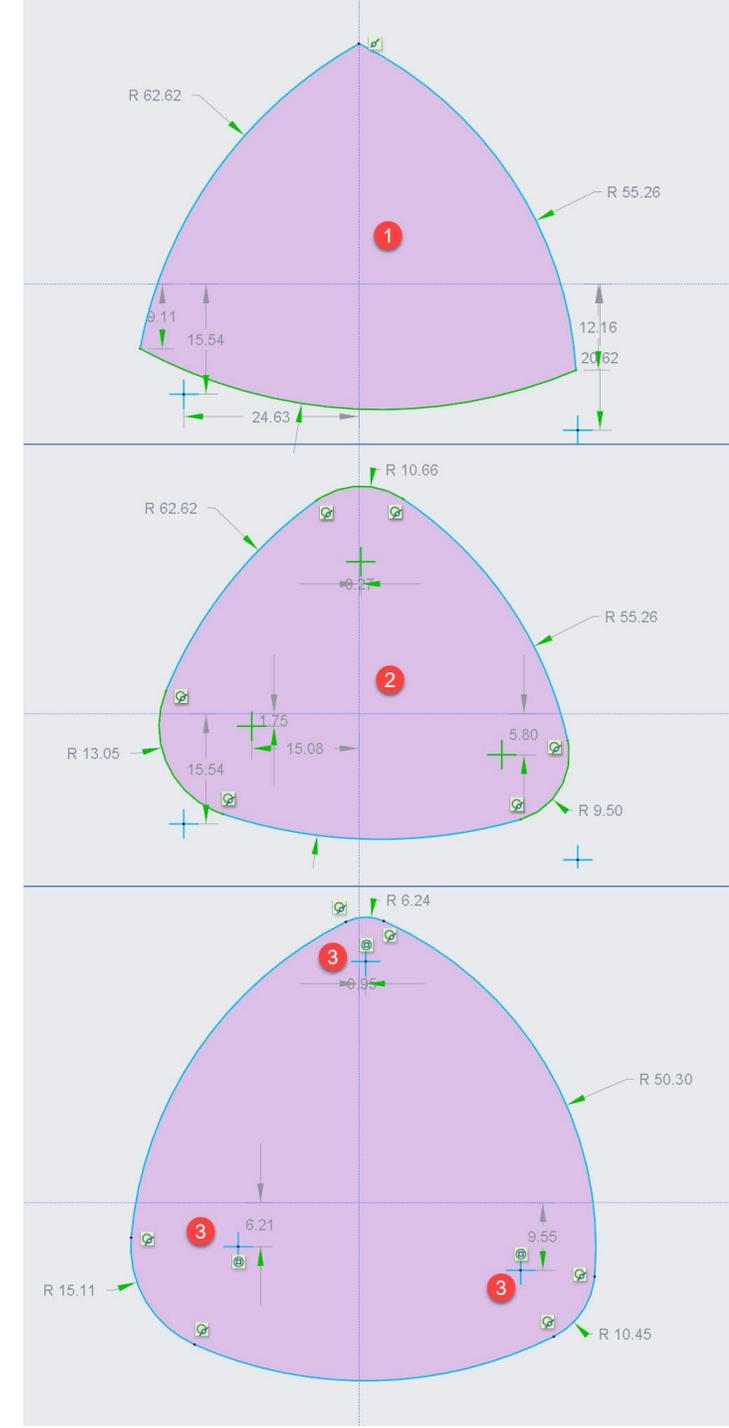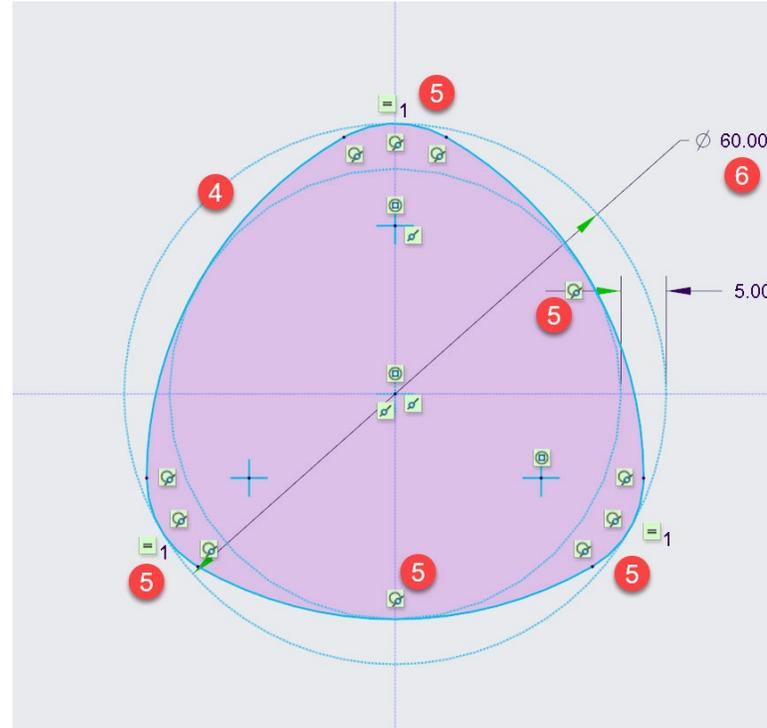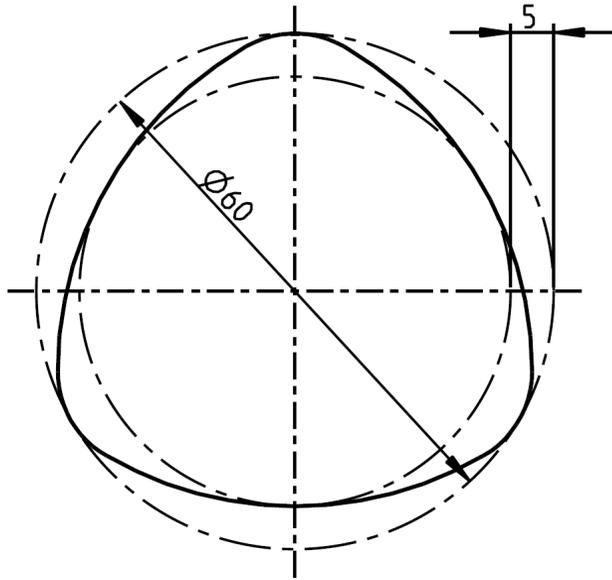
	Workflow in CREO
1	Start with three Arcs
2	Add fillets
3	Add coincident constraints to the three centerpoints
4	Add two construction circles
5	Add constraints until only TWO dimension left
6	Modify dimensions

Sketch-14: Simple Mechanism Simulation
Advanced constraints!:
https://de.wikipedia.org/wiki/Inversor_von_Peaucellier

	Workflow in CREO
1	Draw lines
2	Constraint Equal Length =1
3	Constraint Equal Length =2
4	Constraint Equal Length =3
5	Add Dimensions and LOCK the turquoise keep black ones unlocked
6	Modify dimension 80 to 75
7	Pick endpoint and move downwards