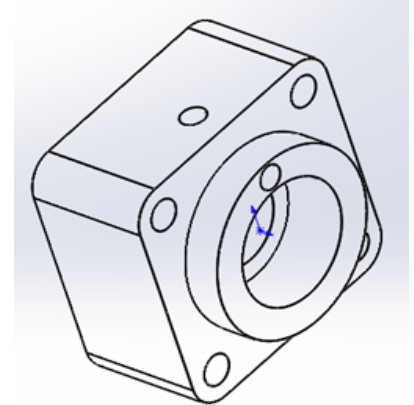
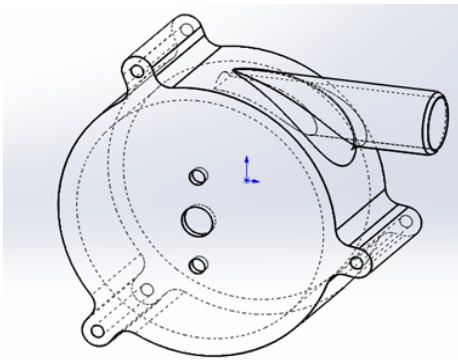


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وزارة التعليم العالي والبحث العلمي

Ministry of Higher Education and Scientific Research

Higher School of Applied Sciences of Tlemcen



Preparatory Cycle

Technical drawing
Handout of application exercises

INTENDED FOR ENGINEERING STUDENTS IN PREPARATORY
CLASSES AND UNDERGRADUATE STUDENTS
" TECHNICAL SCIENCES "

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ESSA/Tlemcen.

Academic Year 2025 / 2026

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A GOOD DRAWING IS BETTER THAN A LONG SPEECH

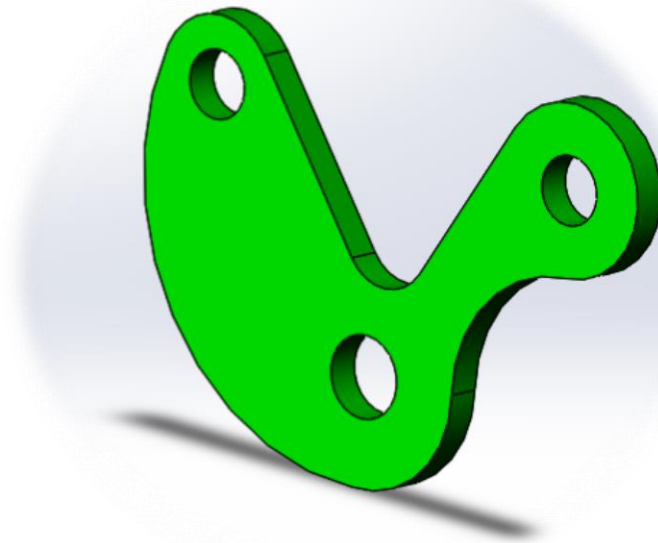
Preface

Currently, students in technological fields and engineering students are regularly faced with modeling for simulation purposes as well as the design of parts and assemblies throughout their academic journey. A strong command of technical drawing is therefore a key asset to facilitate these modeling and design activities.

This document, dedicated to technical drawing application exercises, is intended for students in higher education institutions specializing in applied sciences and technological disciplines. It compiles a series of exercises given to students between 2015 and 2025, used in practical workshops, supervised assignments, and examination assessments. The entire content has been developed in accordance with the official curriculum.

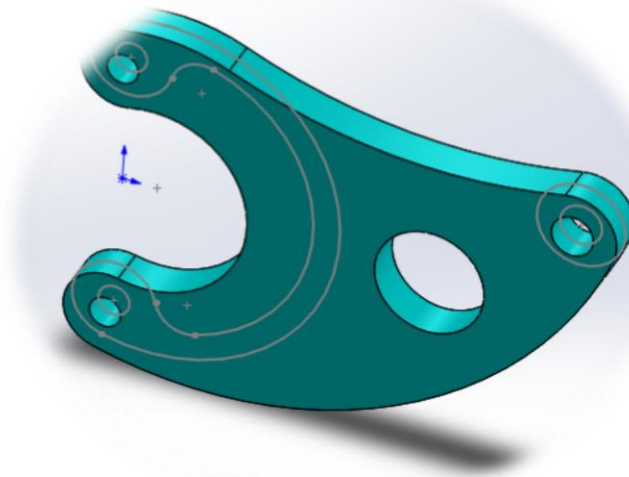
The aim is to help students develop a rigorous approach to solving application exercises and to strengthen their spatial visualization skills in relation to different types of graphic representations—such as fittings, orthographic projection, perspective views, sections and cross-sections, as well as dimensional dimensioning. It also contributes to improving the analysis of assembly drawings while adhering to fundamental rules, conventions, and drafting standards, in order to ensure effective reading and understanding of detail and assembly drawings.

For preparatory classes, assembly drawings will be used as an educational tool for learning the study of assembly drawings. Subsequently, a part will be selected to produce its detailed drawing. Students working with SolidWorks will then be able to model the devices in 3D, carry out their assembly, and generate their technical drawings.



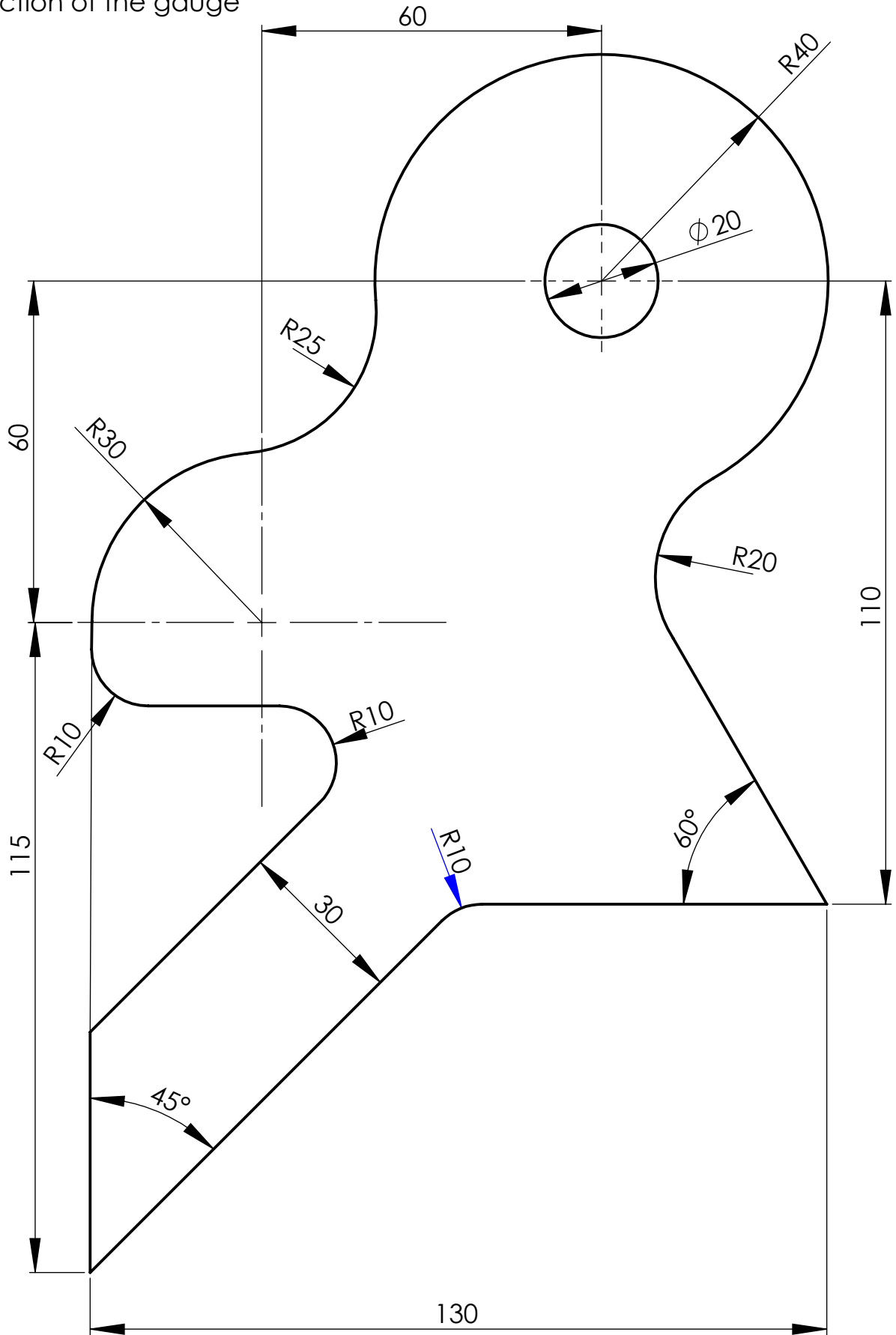
TANGENTS AND CONNECTIONS

The objective of this exercise series is how to draw complex geometric shapes using geometric construction methods.



Designate unknown centers and points using geometric construction connection of the gauge

2



Préparatory cycle
Gr:

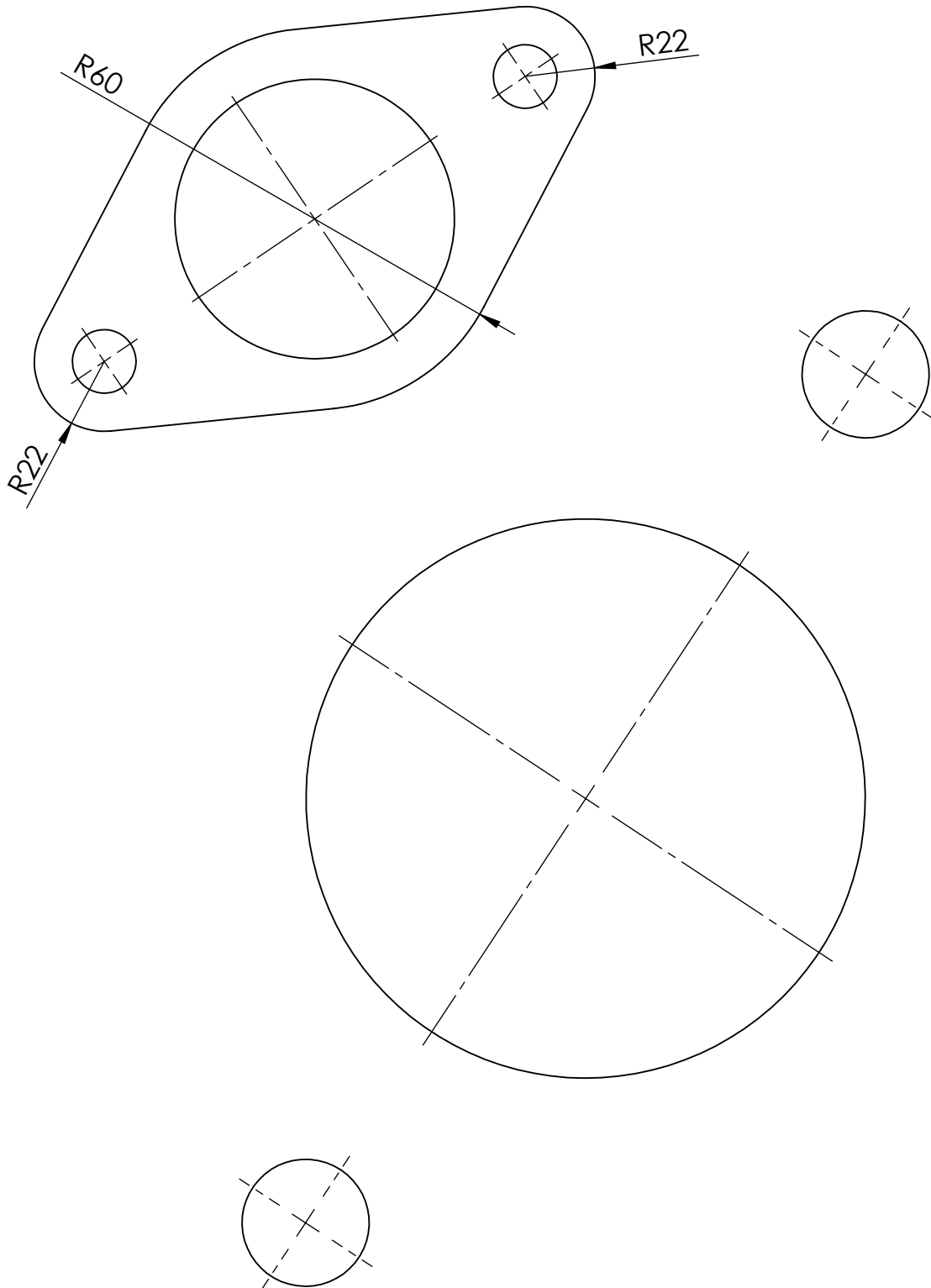
ESSA. TLEMCEN
TANGENTS N°1

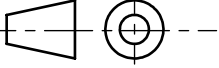
Scale : 1/1
Name:
FirstName:



Draw the following part at 1/1 scale, don't clear the graphical build and determine the connection points.

3




Préparatory cycle
Gr:

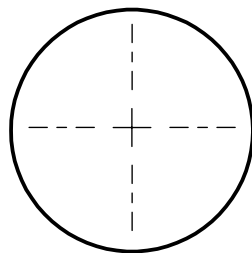
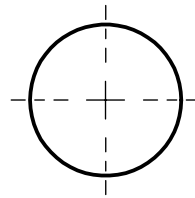
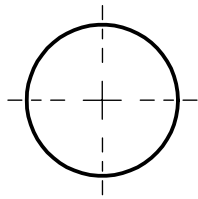
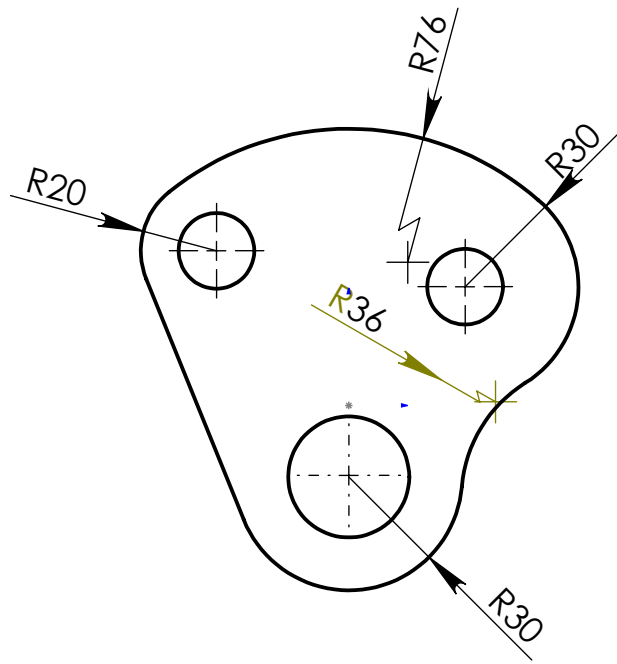
ESSA. TLEMCEN
TANGENTS N°2

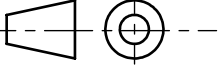
Scale : 1/1
Name:
FirstName:



Draw the caliber below at 1/1 scale, don't clear the graphical build and tangency points.

4



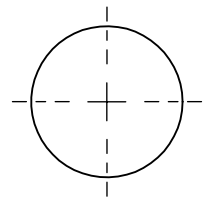
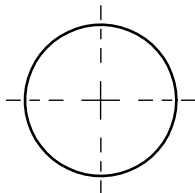
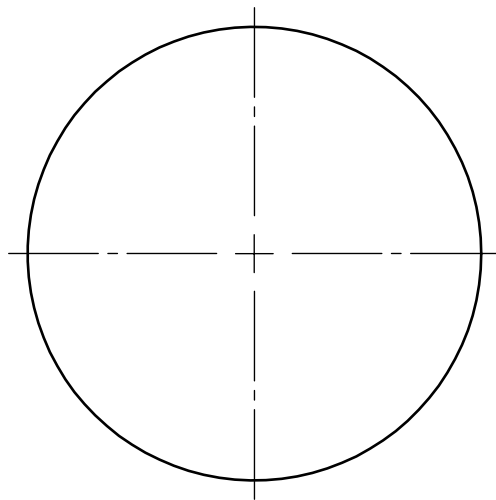
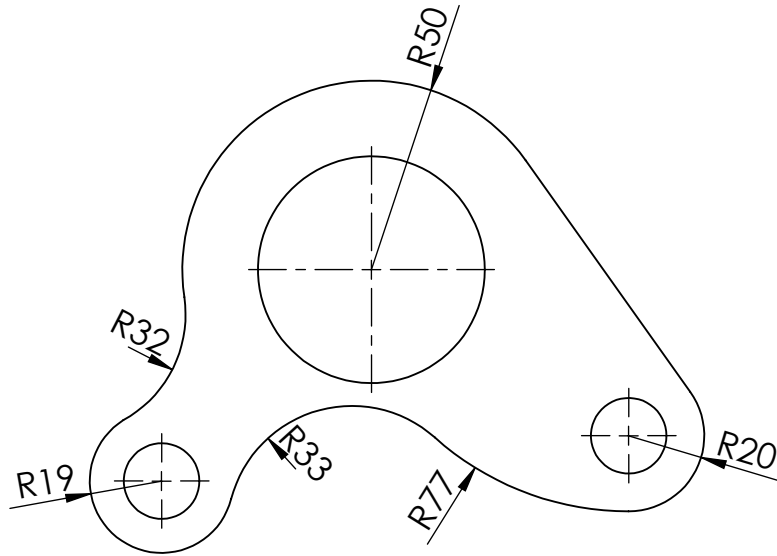

Préparatory cycle
Gr:

ESSA . TLEMCEN
TANGENTS N°3

Scale : 1/1
Name:
FirstName:



Draw the part below at 1/1 scale, leaving the construction lines and tangency points.

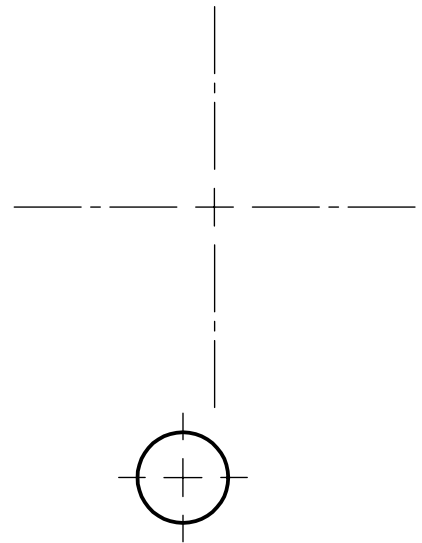
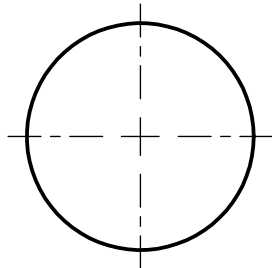
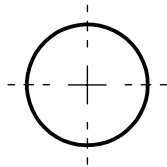
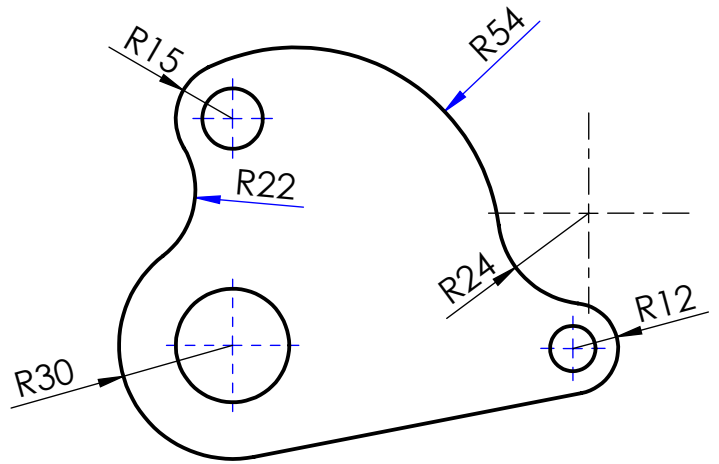



Préparatory cycle
Gr:

ESSA. TLEMCEN
TANGENTS N°4

Scale : 1:1
Name:
FirstName:

Draw the part below at 1/1 scale, leaving the construction lines and the points of tangency.



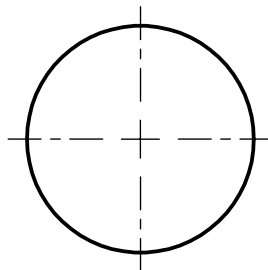
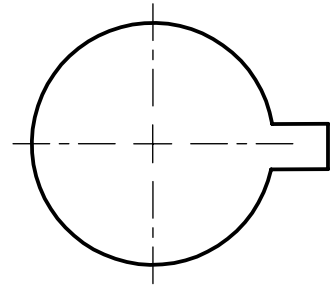
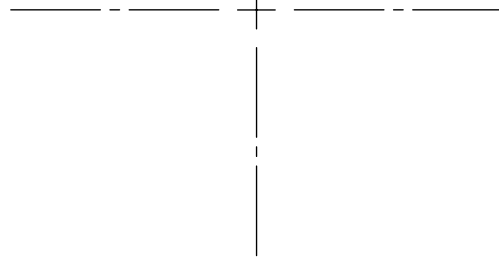
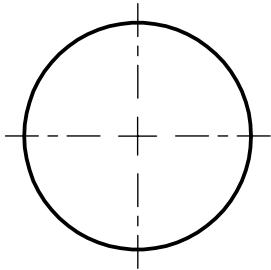
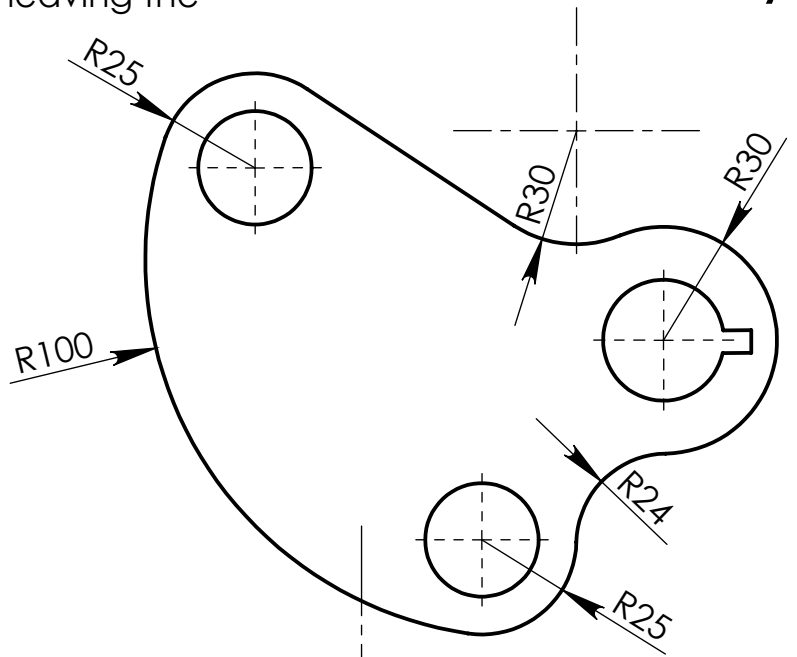

Préparatory cycle
Gr:

ESSA. TLEMCEN
TANGENTS N°5

Scale : 1/1
Name:
FirstName:



Draw the part below at 1/1 scale, leaving the construction lines and the points of tangency.

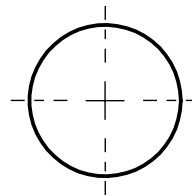
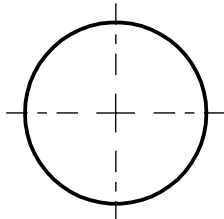
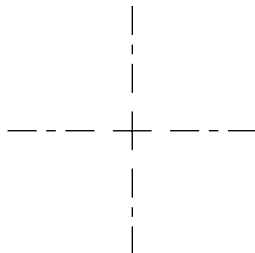
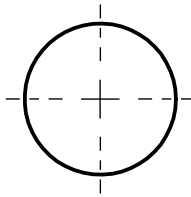
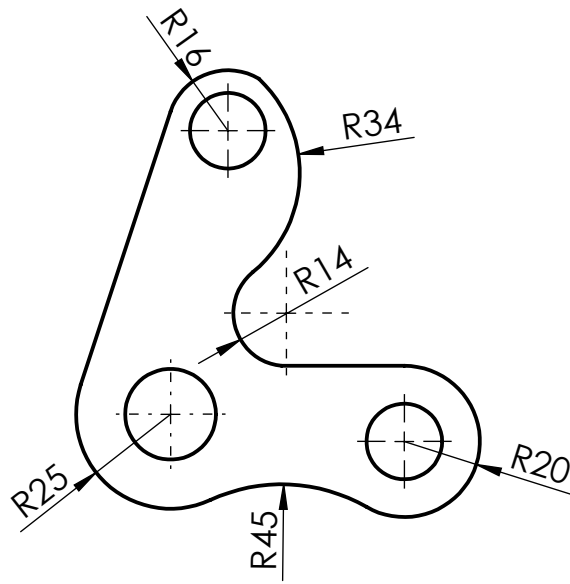


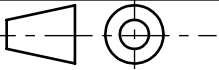
Préparatory cycle
Gr:

ESSA . TLEMCEN
TANGENTS N°6

Scale : 1:1
Name:
FirstName:

Draw the following part at 1/1 scale, don't clear the graphical build and determine The connection points.

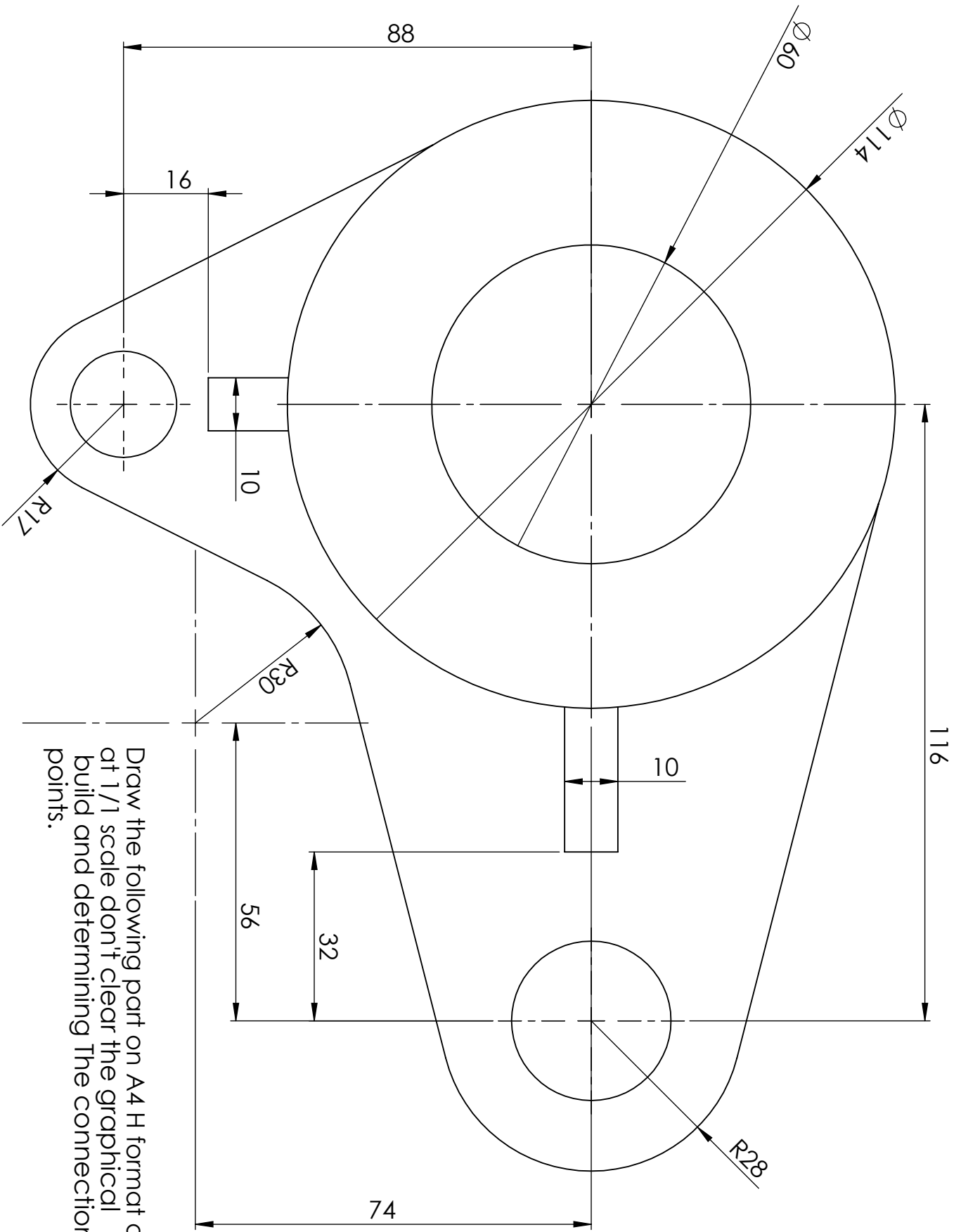



Préparatory cycle
Gr:

ESSA.TLEMCEN
TANGENTS N°7

Scale : 1/1
Name:
FirstName:





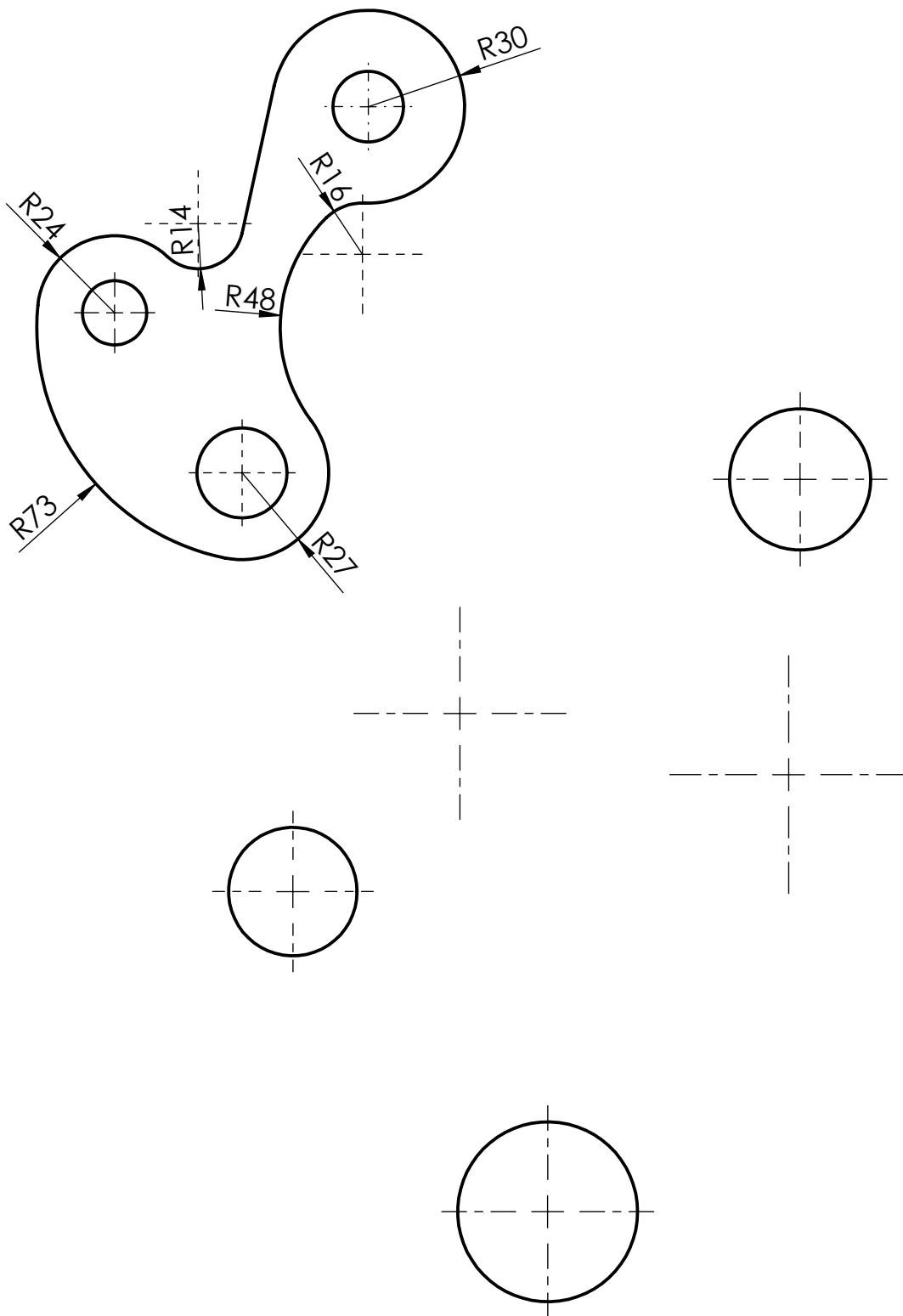
Draw the following part on A4 H format and at 1/1 scale don't clear the graphical build and determining The connection points.

Preparatory cycle
Gr:

ESSA.TLEMCEN
TANGENTS N°8

Scale :1/1
Name
first name

Draw the following part at 1/1 scale, don't clear the graphical build and determine The connection points.



Préparatory cycle

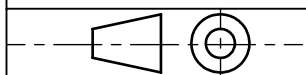
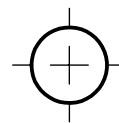
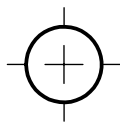
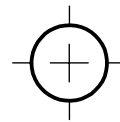
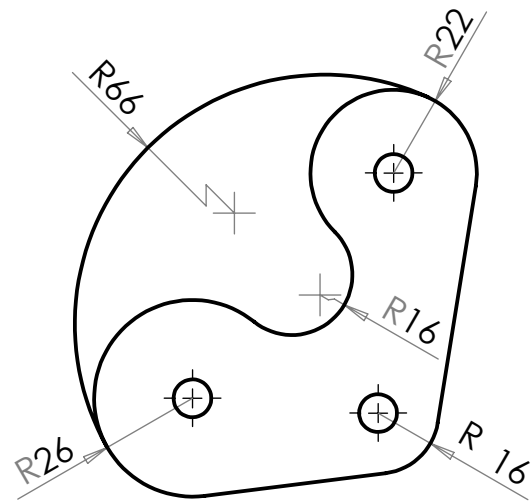
ESSA . TLEMCEN
TANGENTS N°9

Scale :1/1



Draw the part below scale 1:1 leaving the construction costs and connection points

11



ESSA.TLEMCEN

Scale : 1:1

Préparatory cycle

TANGENTS N°10

Name:

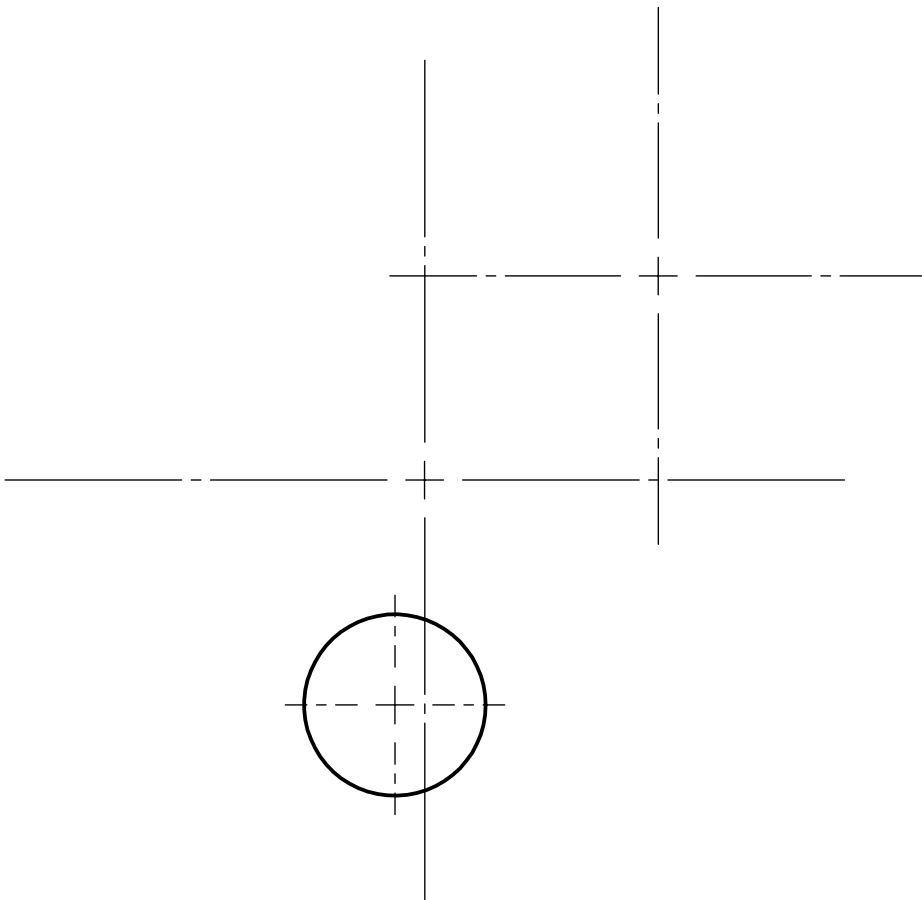
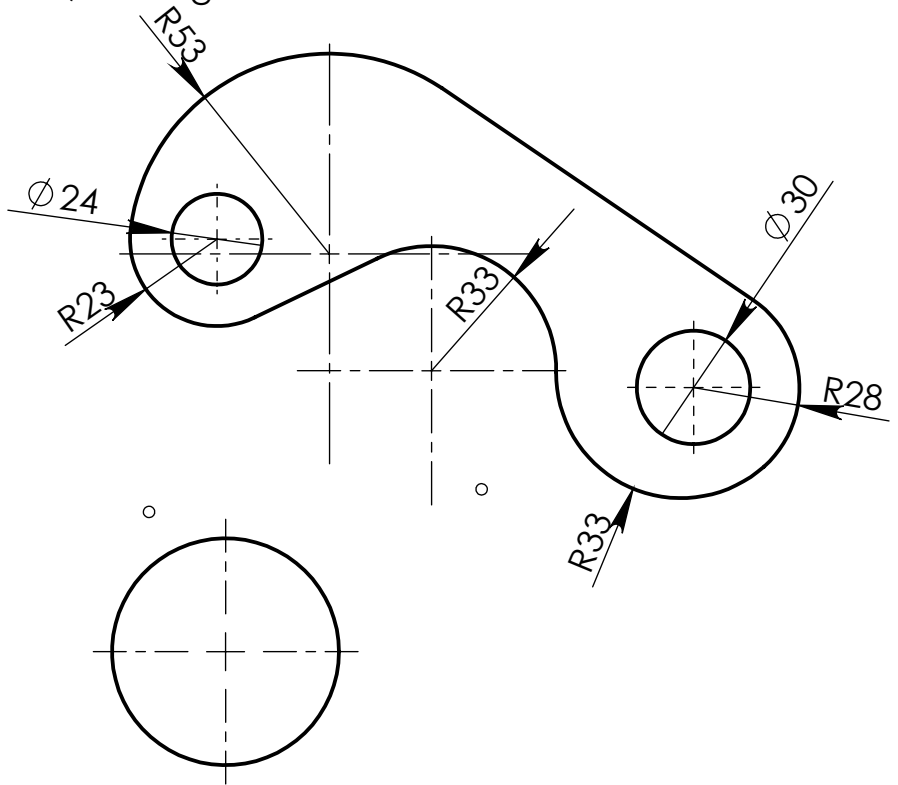
Gr:

FirstName:



Draw the part below at 1/1 scale, leaving the construction lines and the points of tangency.

12



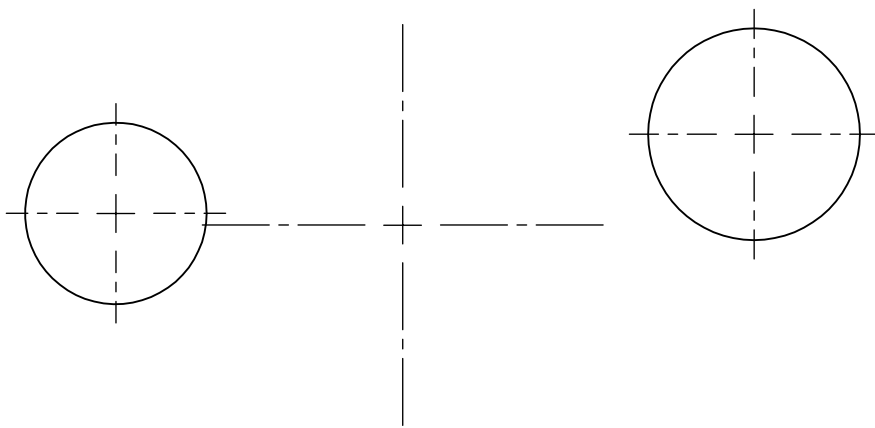
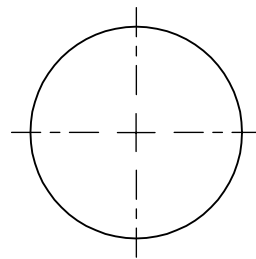
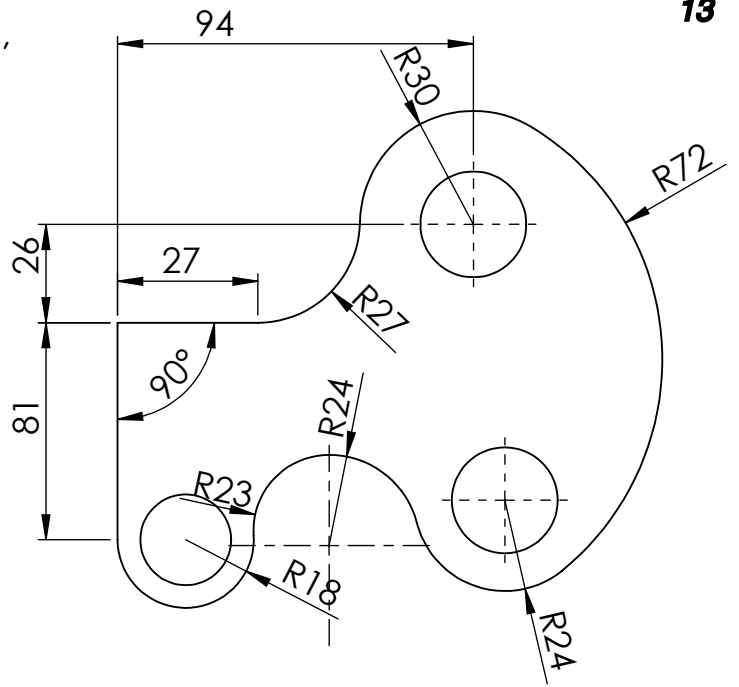
Préparatory cycle
Gr:

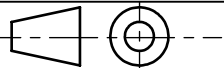
ESSA. TLEMCEN
TANGENTS N°11

Scale : 1/1
Name:
FirstName:



Draw the part below at a scale of 1/1,
leaving the construction lines
and connection points




Préparatory cycle
Gr:

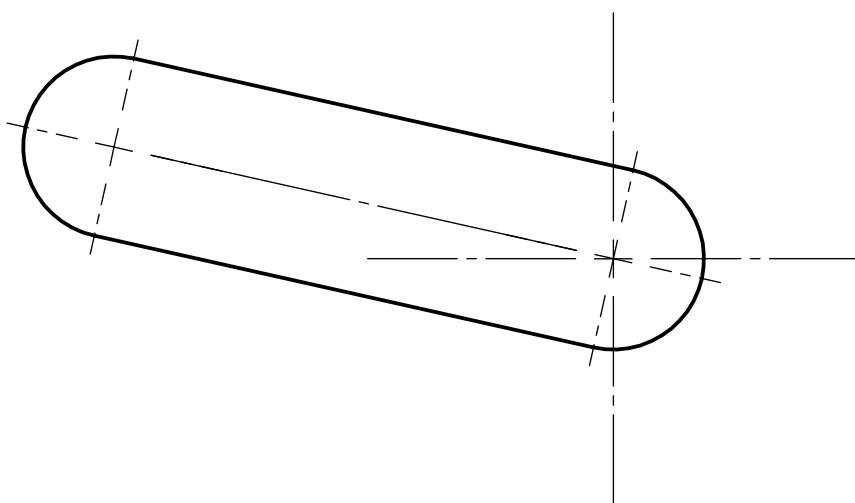
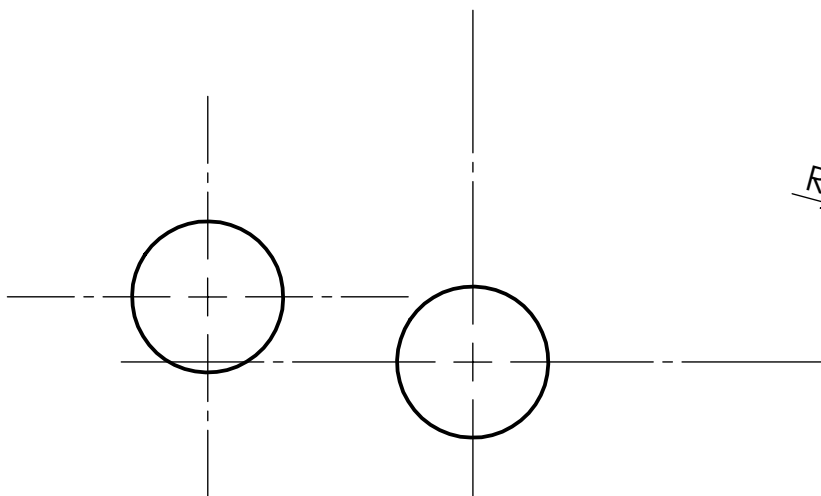
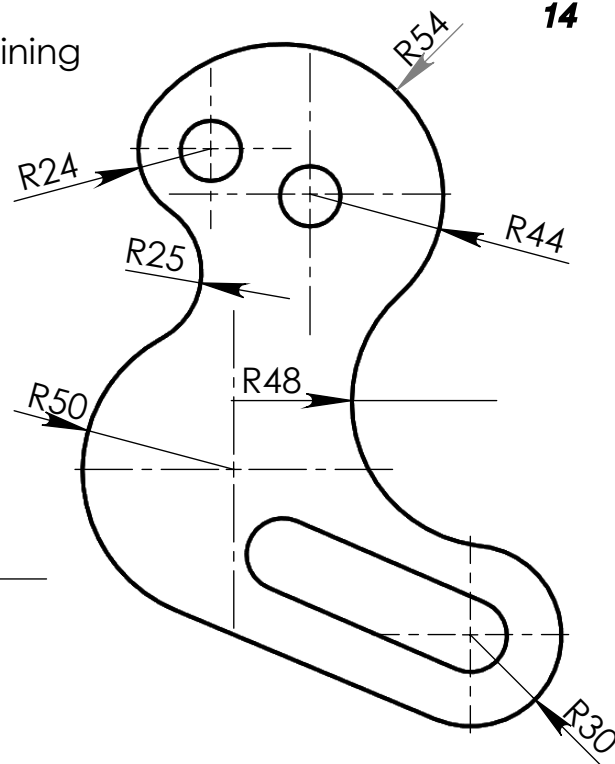
ESSA.TLEMCEN
TANGENTS N°12

Scale : 1/1
Name:
FirstName:



Draw the following piece at a scale of 1:1 leaving the construction features and determining connection points.

14



Préparatory cycle
Gr:

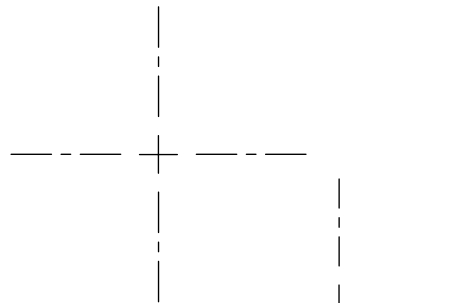
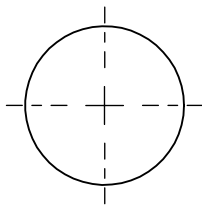
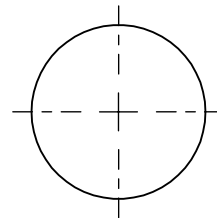
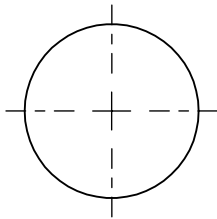
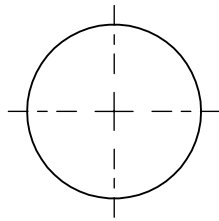
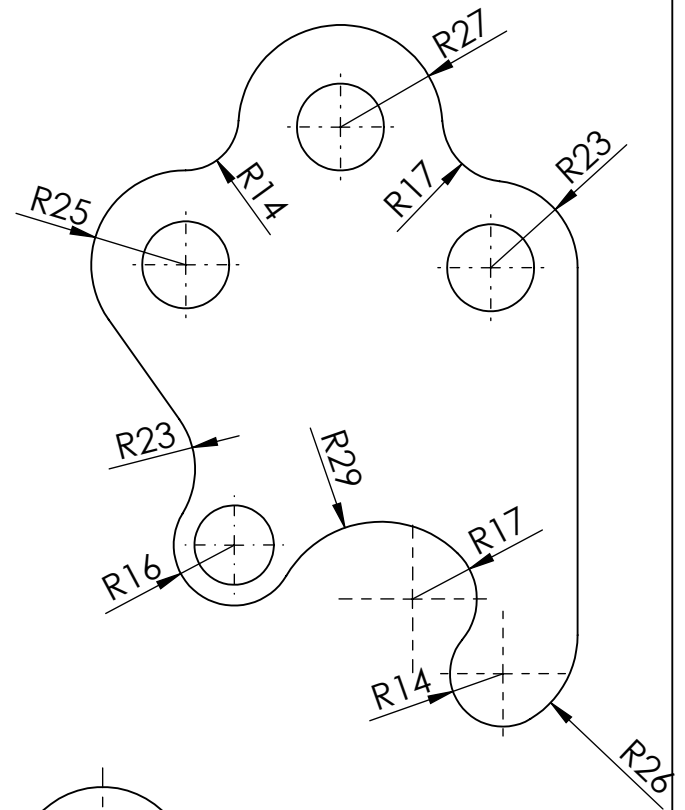
ESSA.TLEMCEN
TANGENTS N°13

Scale : 1:1
Name:
FirstName:



Draw the following part at 1/1 scale, don't clear the graphical build and determine The connection points.

15



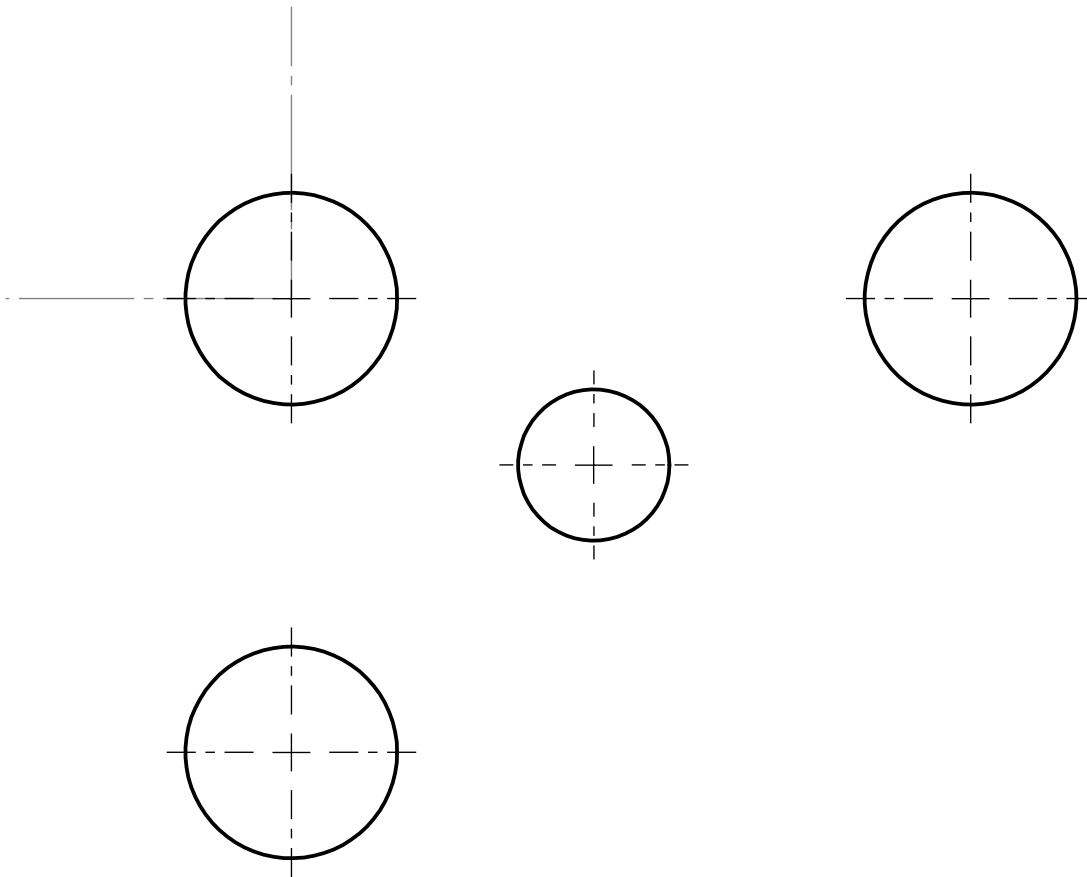
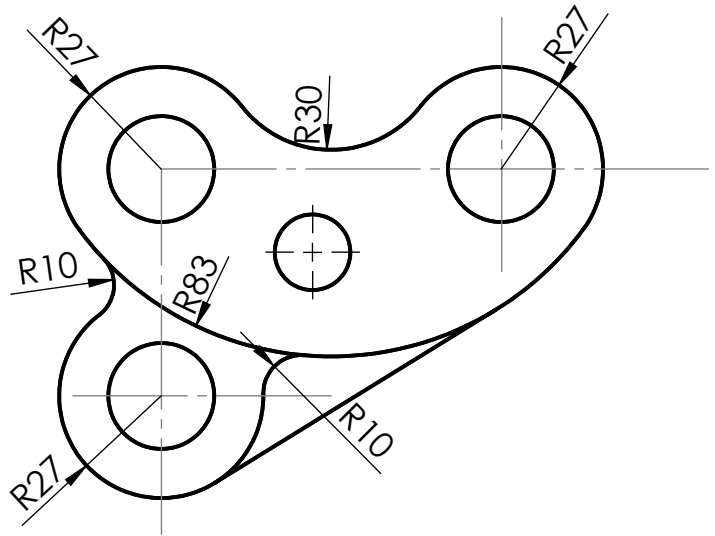
Préparatory cycle
Gr:

ESSA . TLEMCEN
TANGENTS N°12

Scale : 1/1
Name:
FirstName:

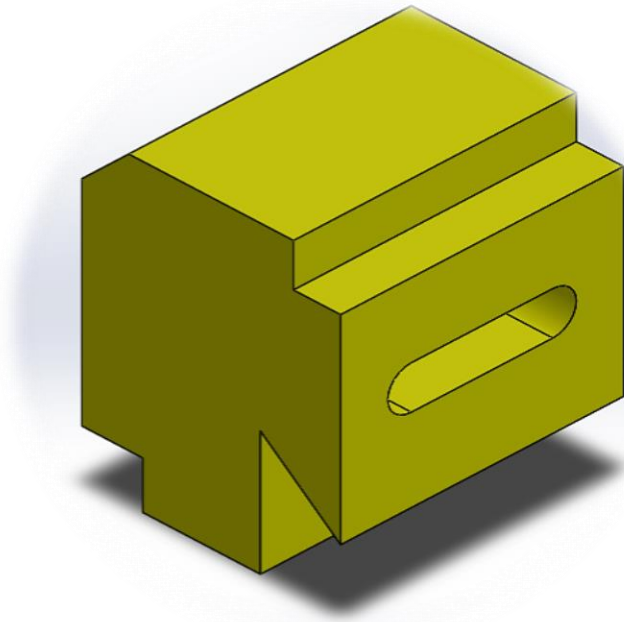


Draw the following part at 1/1 scale, don't clear the graphical build and determine The connection points.



	<p>ESSA.TLEMCEN</p>	<p>Scale : 1/1</p>
<p>Préparatory cycle</p>	<p>TANGENTS N°15</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>

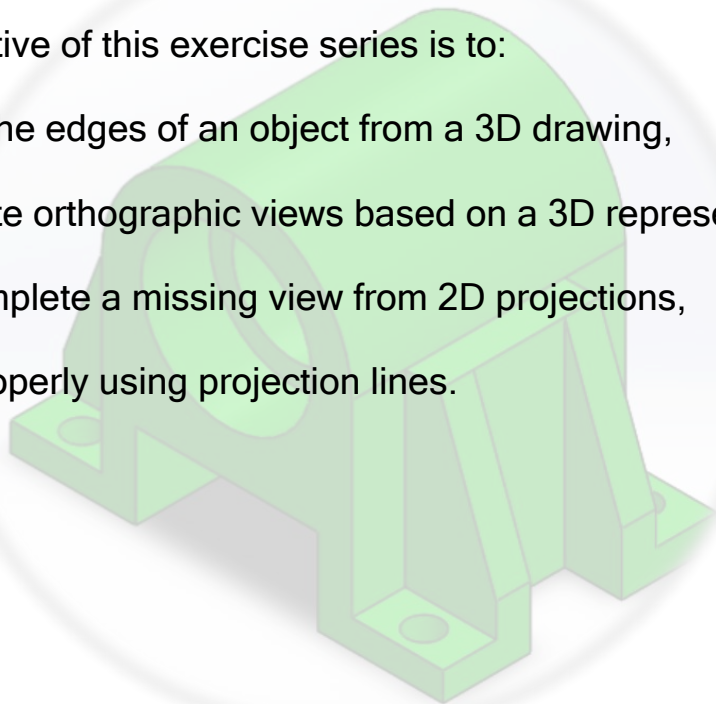




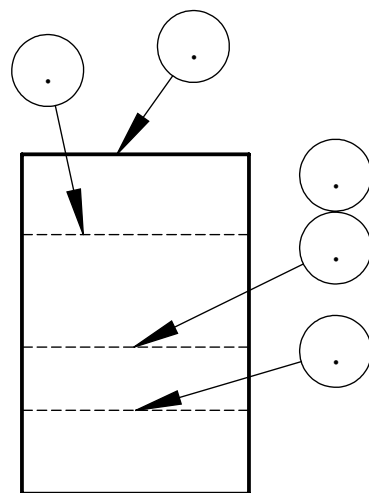
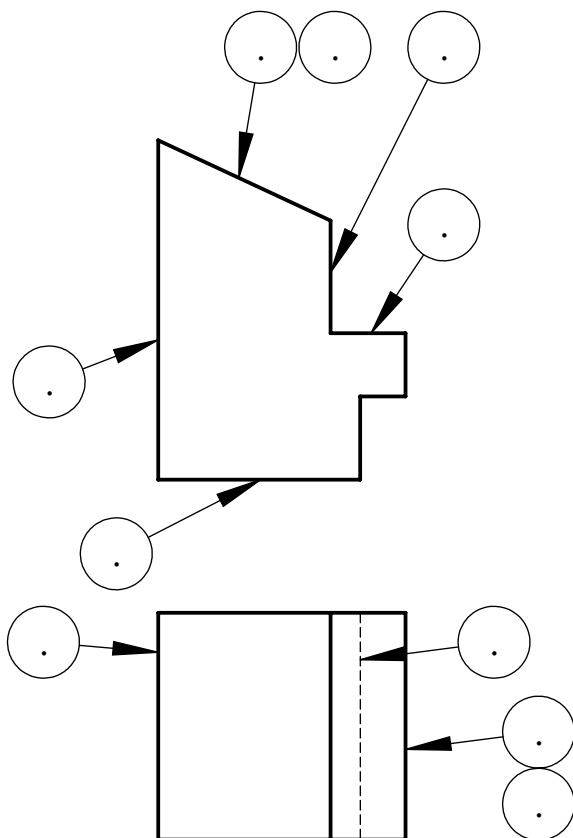
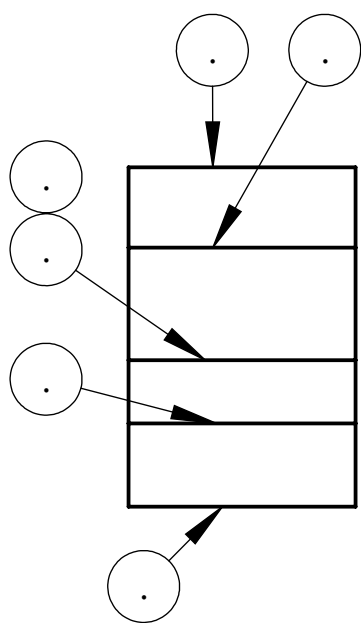
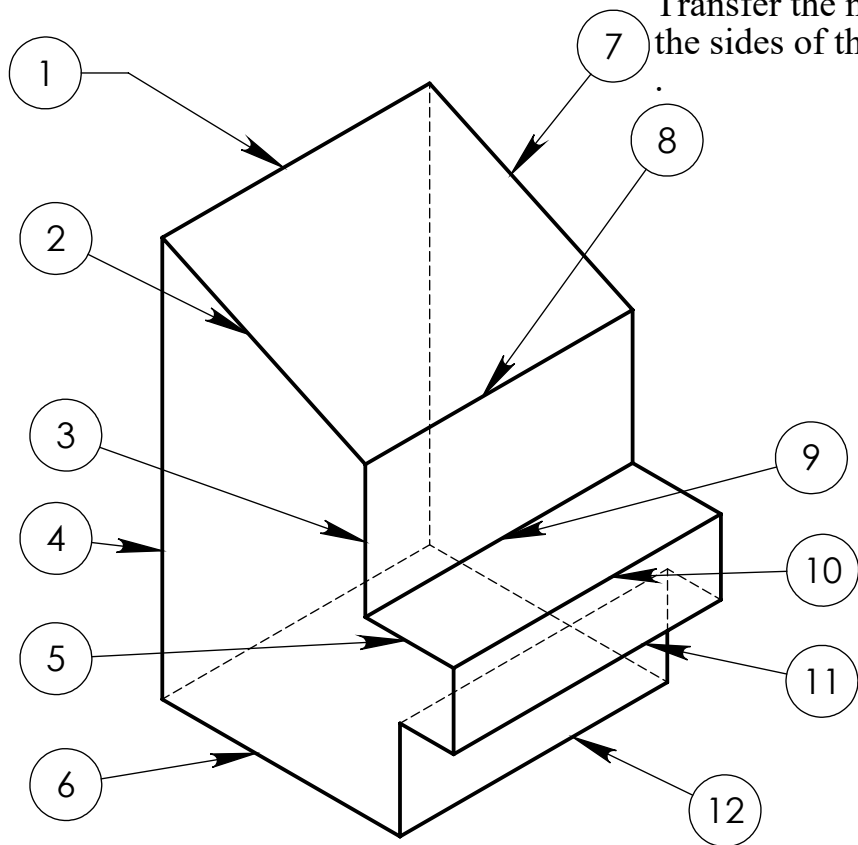
ORTHOGONAL PROJECTION

The objective of this exercise series is to:

- * Identify the edges of an object from a 3D drawing,
- * Complete orthographic views based on a 3D representation,
- * And complete a missing view from 2D projections, while properly using projection lines.



Transfer the numbered guides from the sides of the perspective onto the views below **18**



Préparatory cycle
Gr:

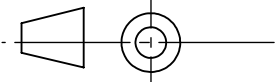
<p>ESSA.TLEMCEN</p> <p>PROJECTION N°1</p>
--

Scale :
Name:
FirstName:



Number the perspective with the view that corresponds to it, following the arrow **19**

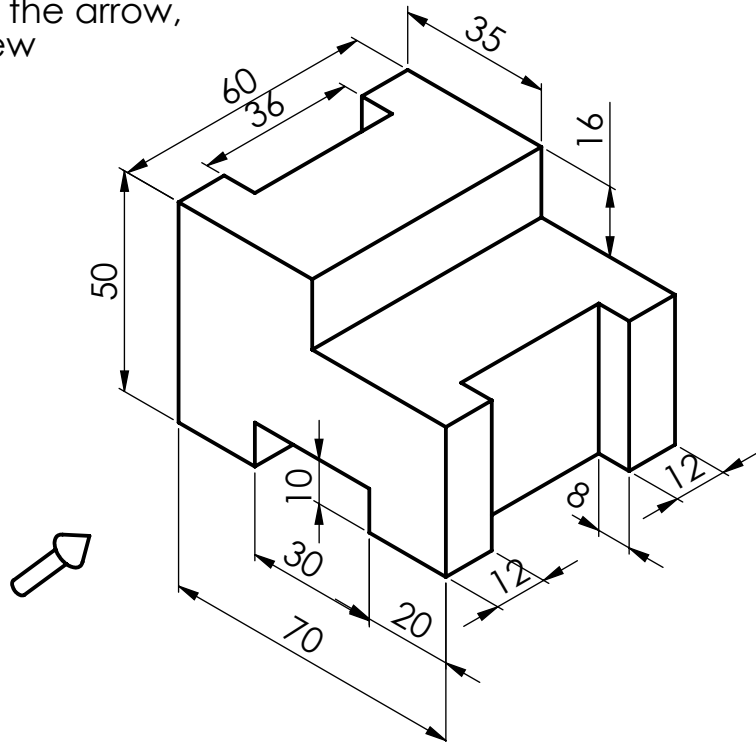
			<p>A1</p>	<p>A2</p>
			<p>A3</p>	<p>A4</p>
			<p>A5</p>	<p>A6</p>
			<p>A7</p>	<p>A8</p>
			<p>A9</p>	<p>A10</p>
			<p>A11</p>	<p>A12</p>



PROJECTION N°2

ESSA.TLEMCEN

Draw the front view following the arrow, the right view and the top view at a scale of 1:1

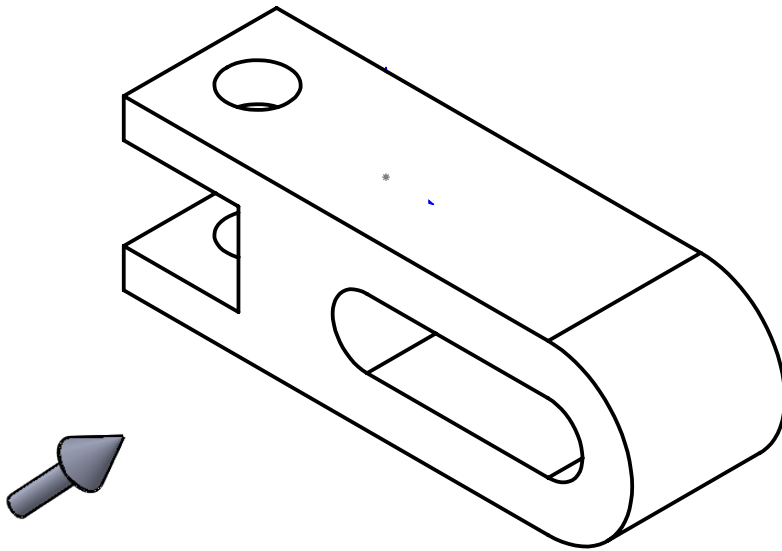
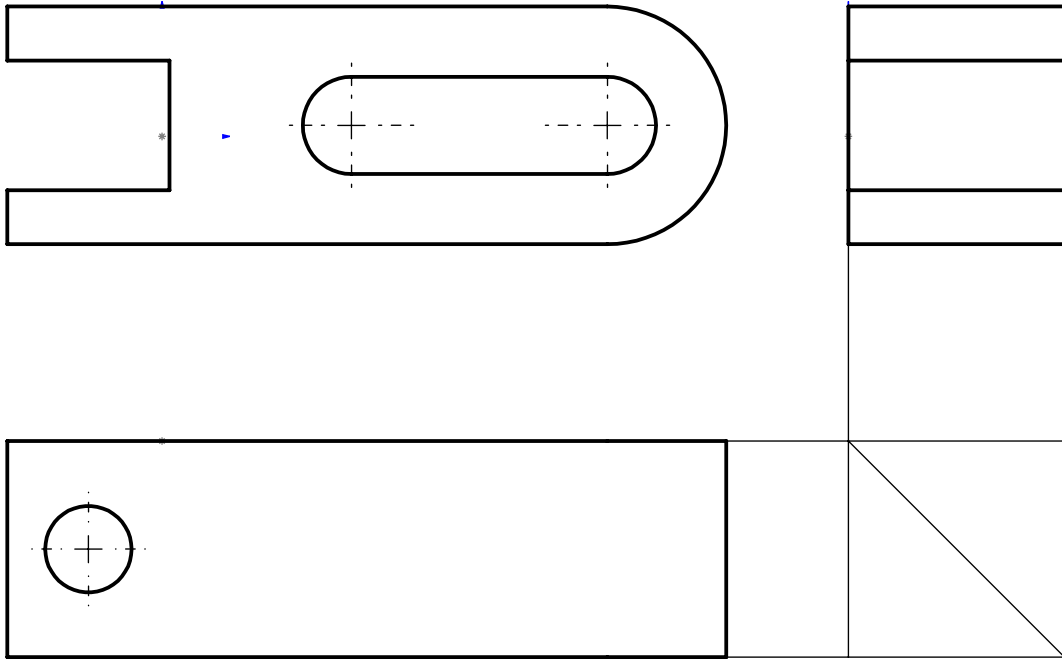



A blank projection grid for drawing the orthographic views. The grid is divided into four quadrants by a horizontal and a vertical line. The top-left quadrant is for the front view, the top-right for the right view, and the bottom-left for the top view. A diagonal line in the bottom-left quadrant indicates the 45-degree construction line for the top view.

	<p>ESSA.TLEMCEN</p>	<p>Scale : 1/1</p>
<p>Préparatory cycle</p>	<p>PROJECTION N°3</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>



Complete the drawing of the three views from the 3D part.



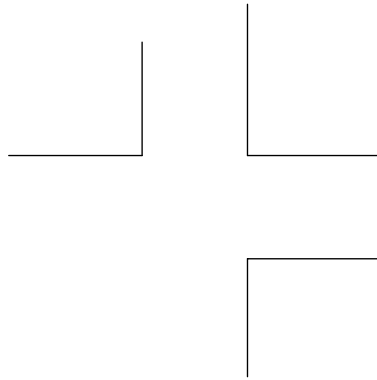
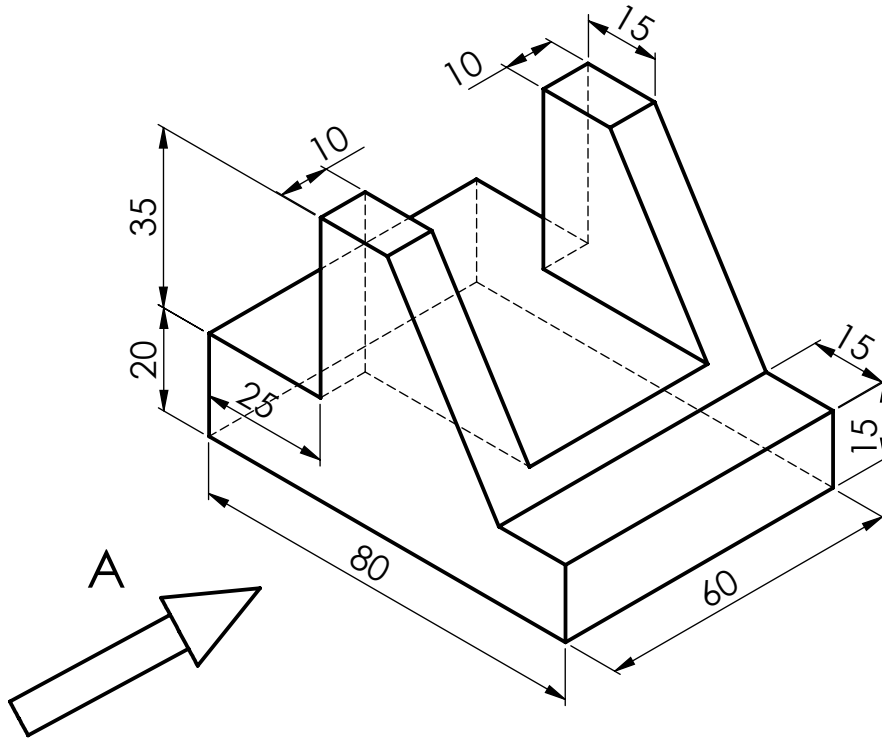

Préparatory cycle
Gr:

ESSA.TLEMCEN
PROJECTION N°4

Scale : 1/1
Name:
FirstName:



Draw the part below in front view, right view and top view following arrow A.



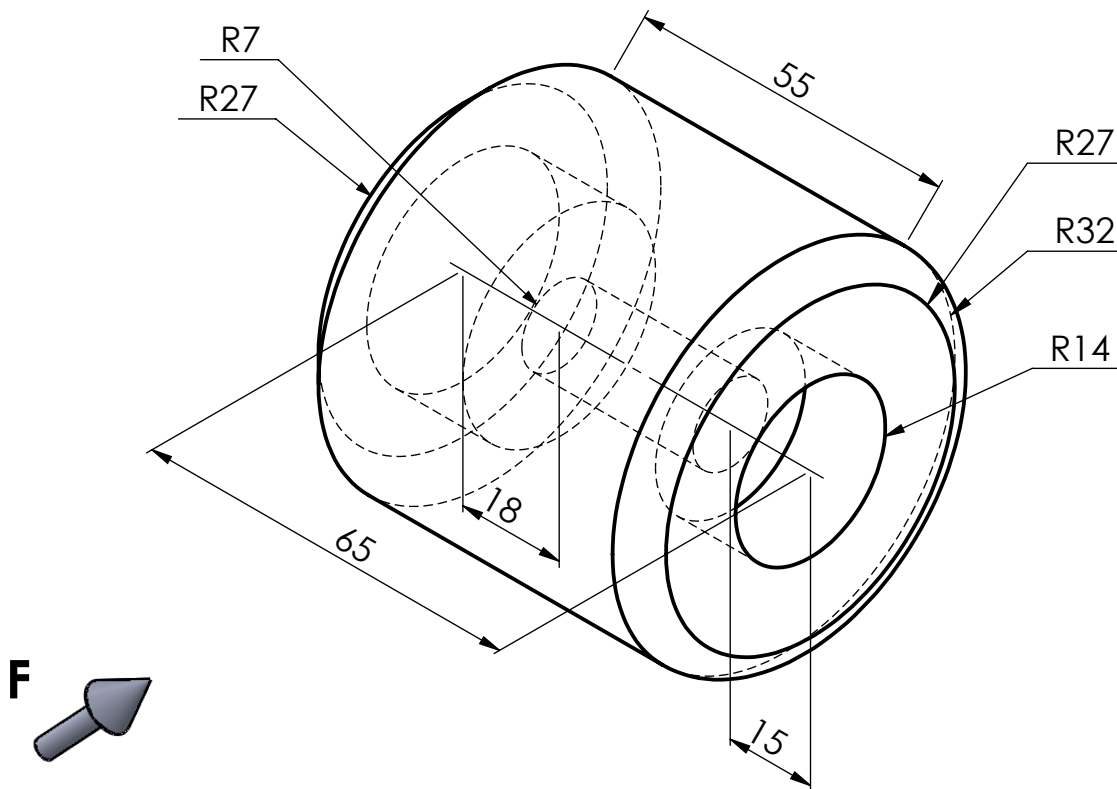
Préparatory cycle
Gr:

ESSA . TLEMCEN
PROJECTION N°5

Scale : 1:1
Name:
FirstName:



Draw the front view and the left view according to arrow F



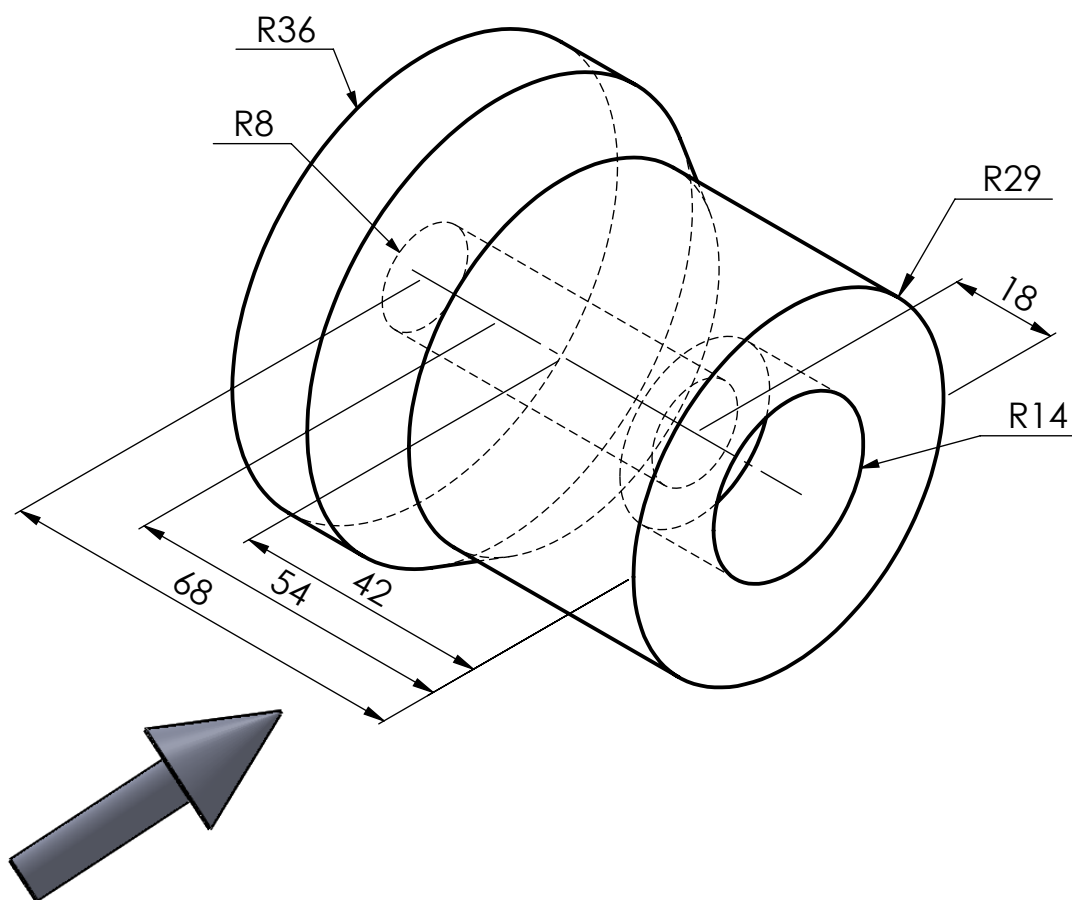
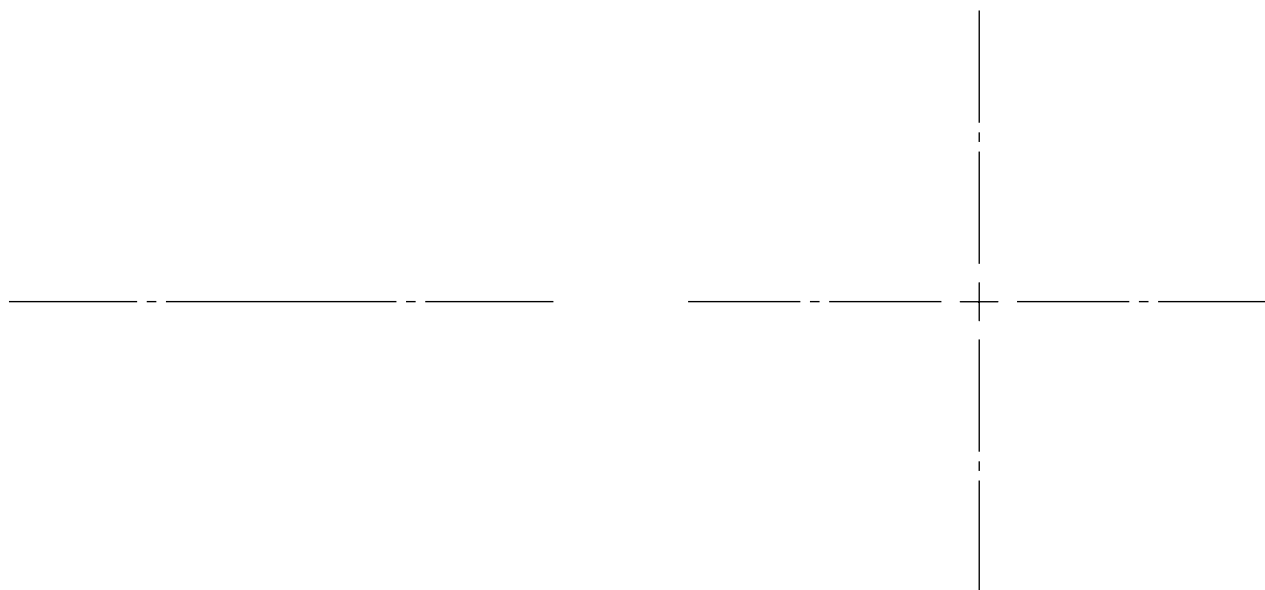
Préparatory cycle
Gr:

<p>ESSA.TLEMCEN</p> <p>PROJECTION N°6</p>
--

Scale : 1/1
Name:
FirstName:



Draw the front view and the left view according to arrow F



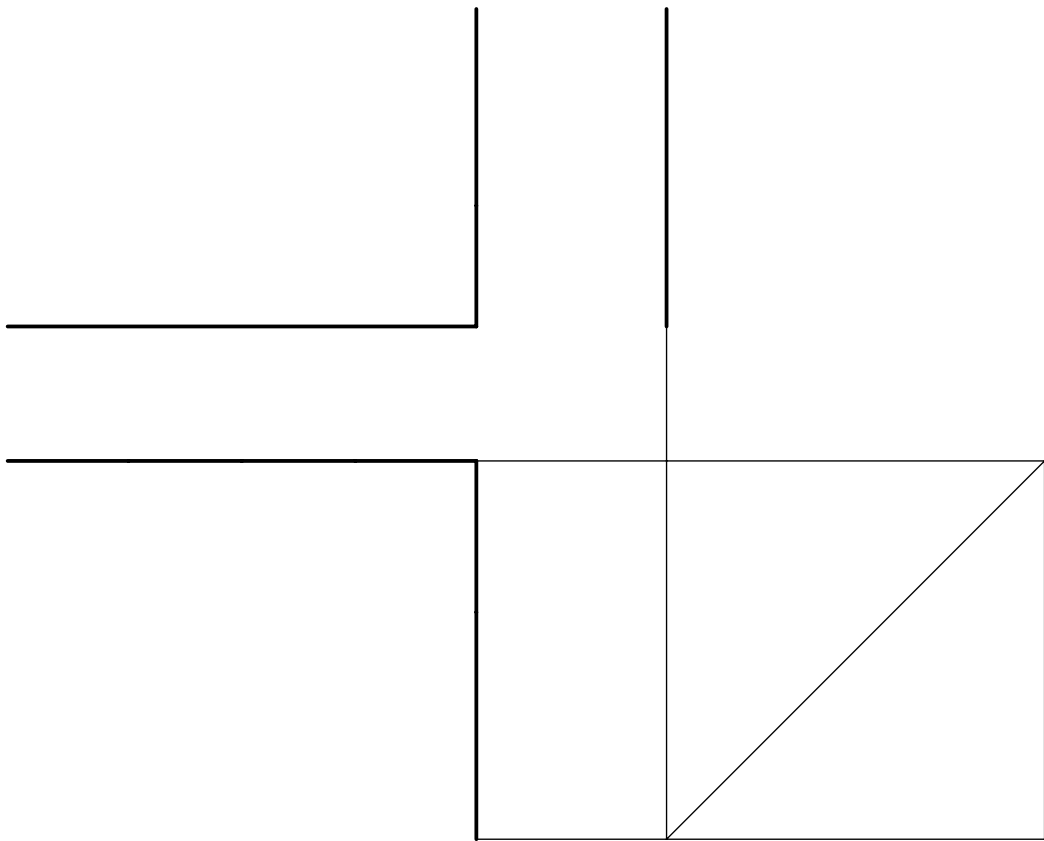
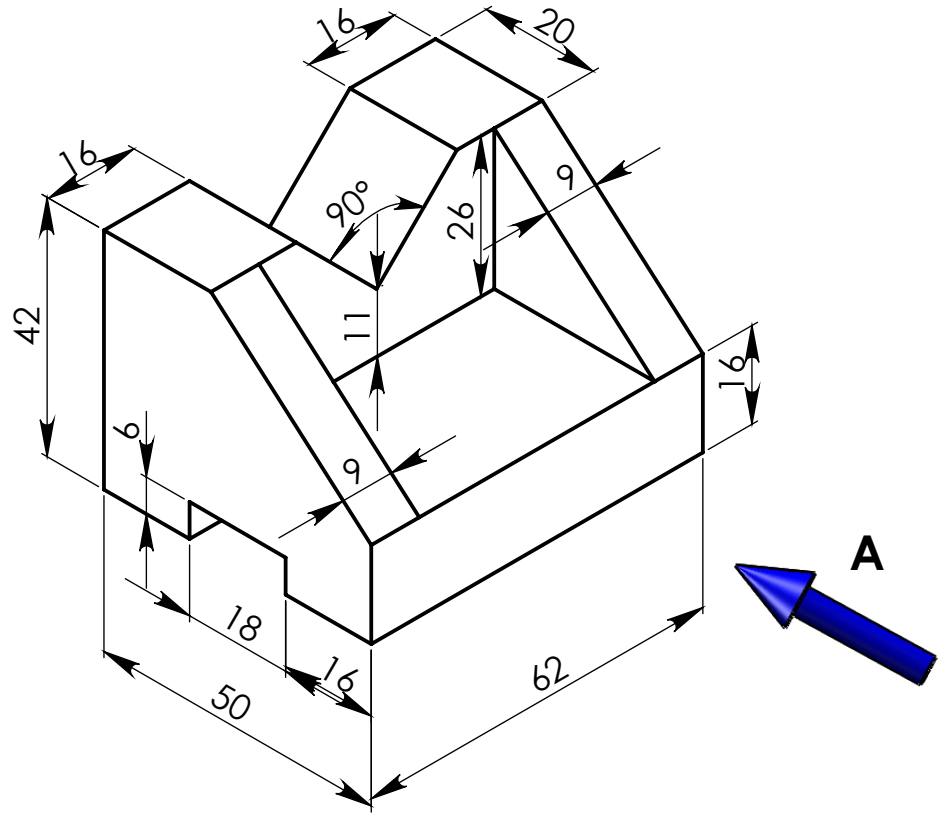
Préparatory cycle
Gr:

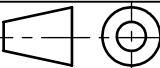
ESSA.TLEMCEN
PROJECTION N°7

Scale : 1/1
Name:
FirstName:



Draw the part below 1:1 scale front view,
left and top view.



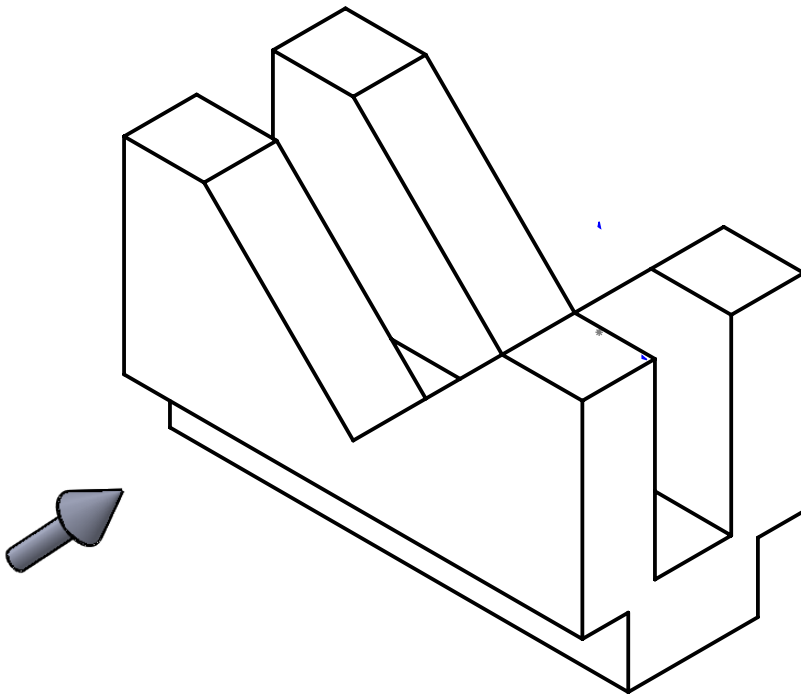
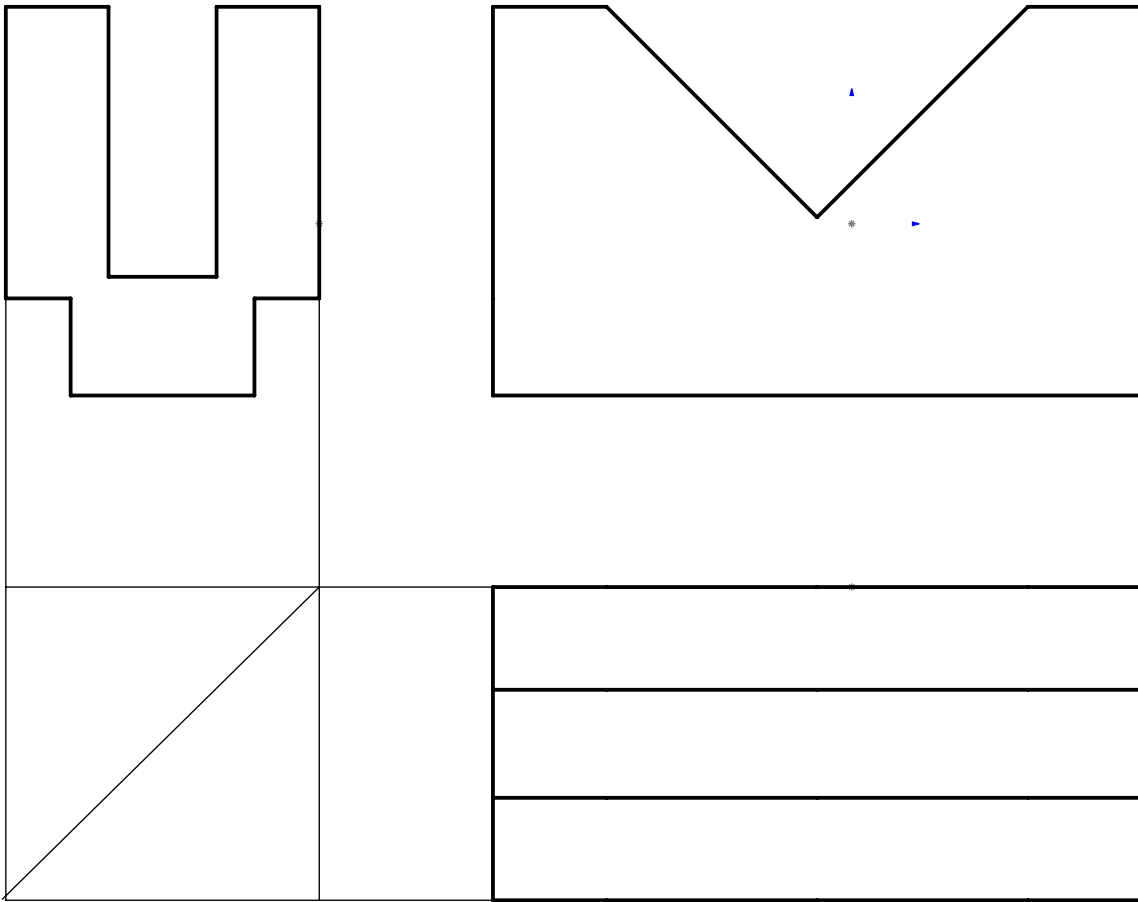

 Préparatory cycle
 Gr:

ESSA.TLEMCEN
PROJECTION N°8

Scale : 1:1
 Name:
 FirstName:



Complete the drawing of the three views from the 3D part.



Préparatory cycle
Gr:

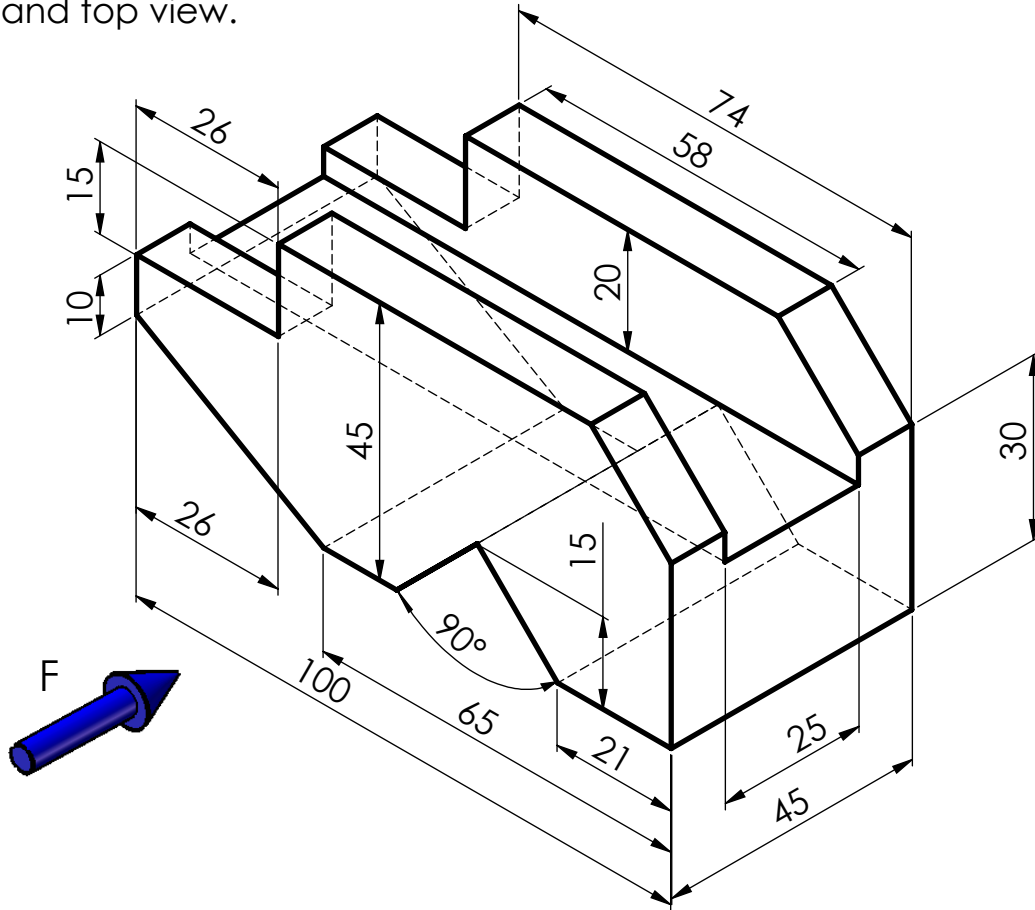
<p>ESSA.TLEMCEN</p> <p>PROJECTION N°9</p>

Scale : 1/1
Name:
FirstName:



Draw the part below in front view following the arrow F, right view and top view.

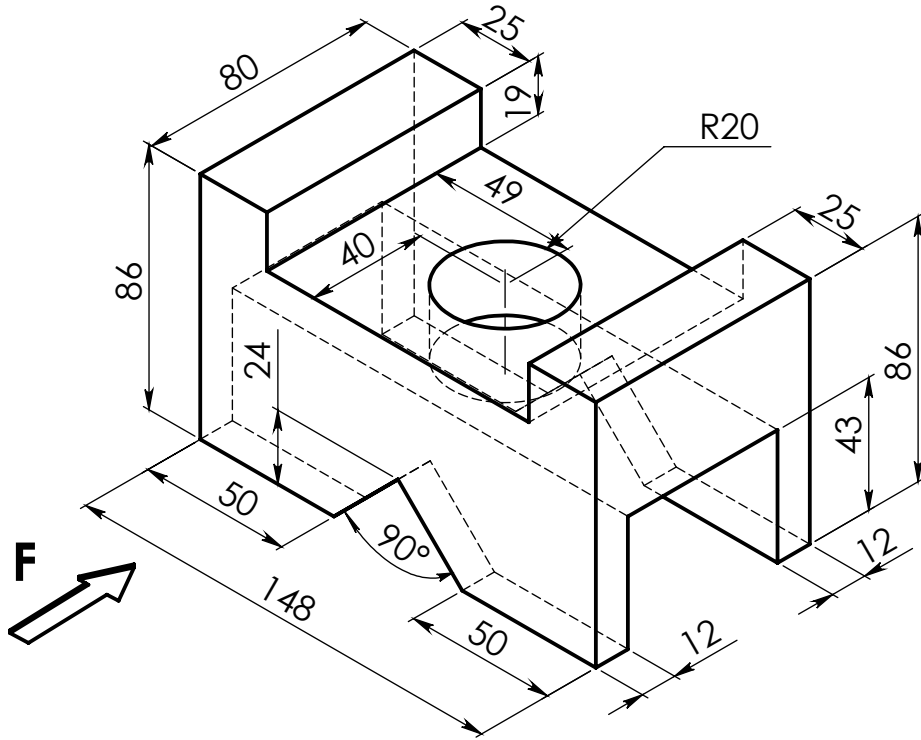
27



	<p>ESSA . TLEMEN</p>	<p>Scale : 1/1</p>
<p>Préparatory cycle</p>	<p>PROJECTION N°10</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>



Draw the part below at 1:2 scale in front view following arrow F, left view and top view.



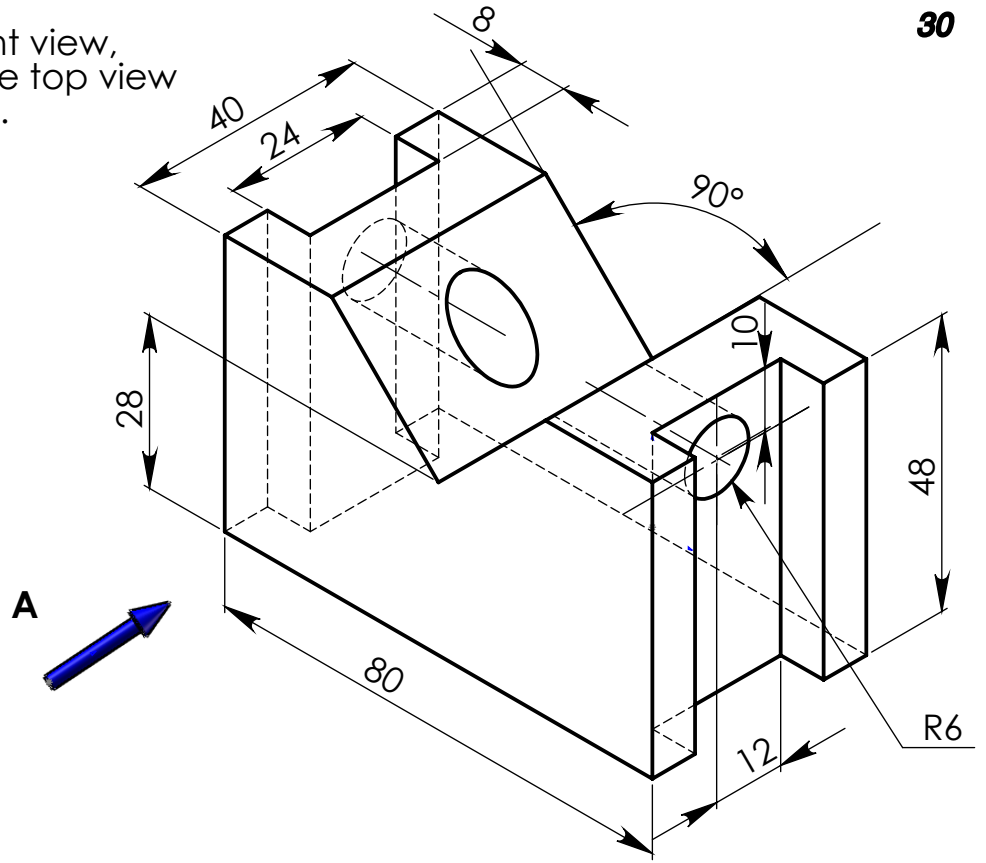
Préparatory cycle
Gr:

<p>ESSA.TLEMCEN</p> <p>PROJECTION N°12</p>

Scale : 1/2
Name:
FirstName:



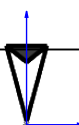
Draw the piece in front view, right view and 1:1 scale top view following the arrow A .



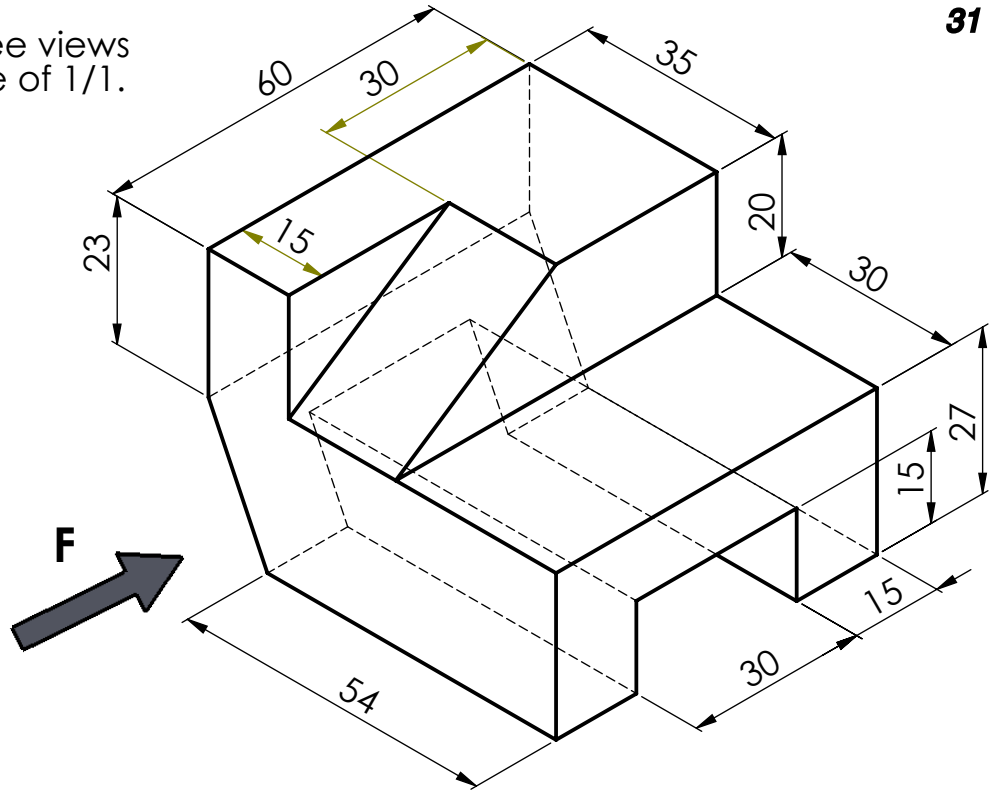
Préparatory cycle
Gr:

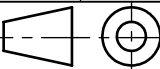
<p>ESSA.TLEMCEN</p> <p>PROJECTION N°13</p>

Scale : 1/1
Name:
FirstName:



Draw the following three views
the arrow F on a scale of 1/1.



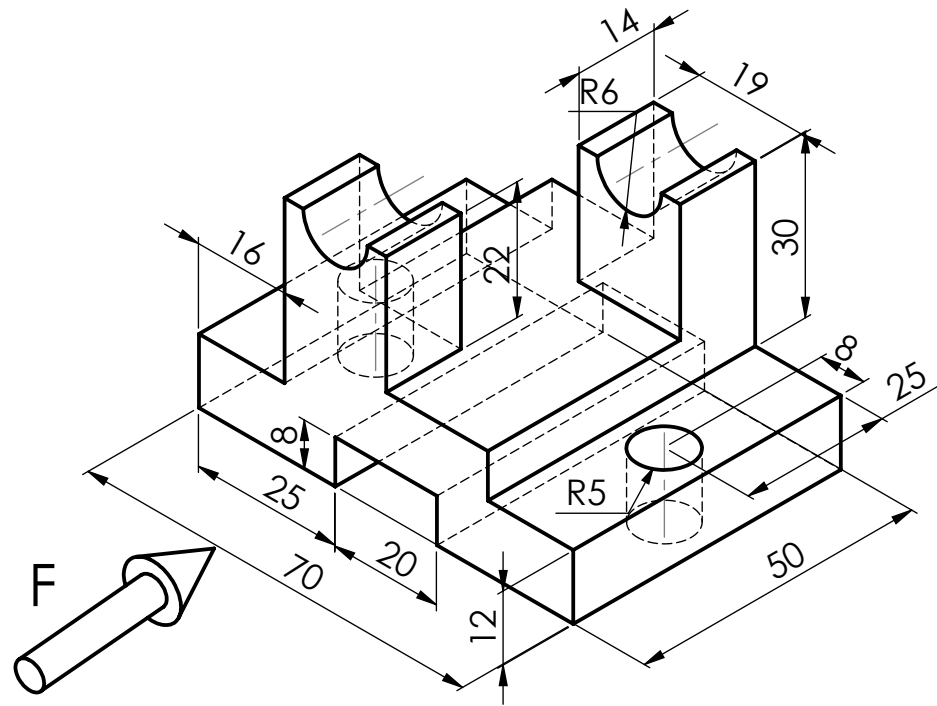

Préparatory cycle
Gr:

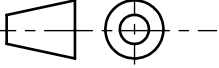
ESSA.TLEMCEN
PROJECTION N°14

Scale : 1:1
Name:
FirstName:



Draw the following part in front view, right view and top view at 1/1 scale.



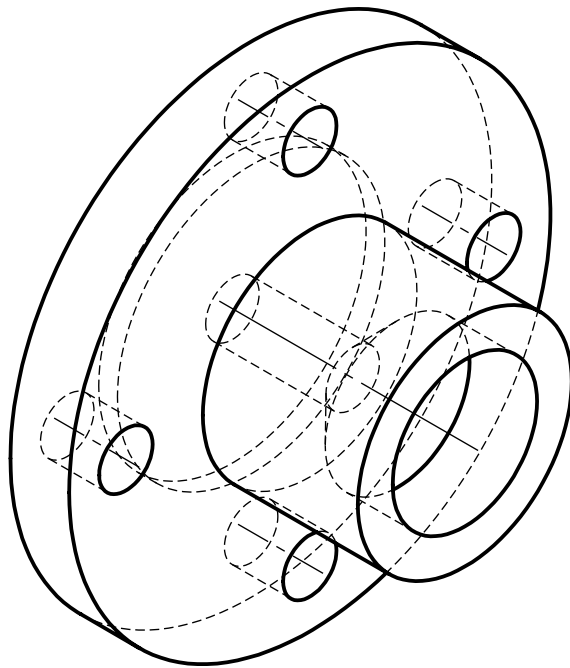
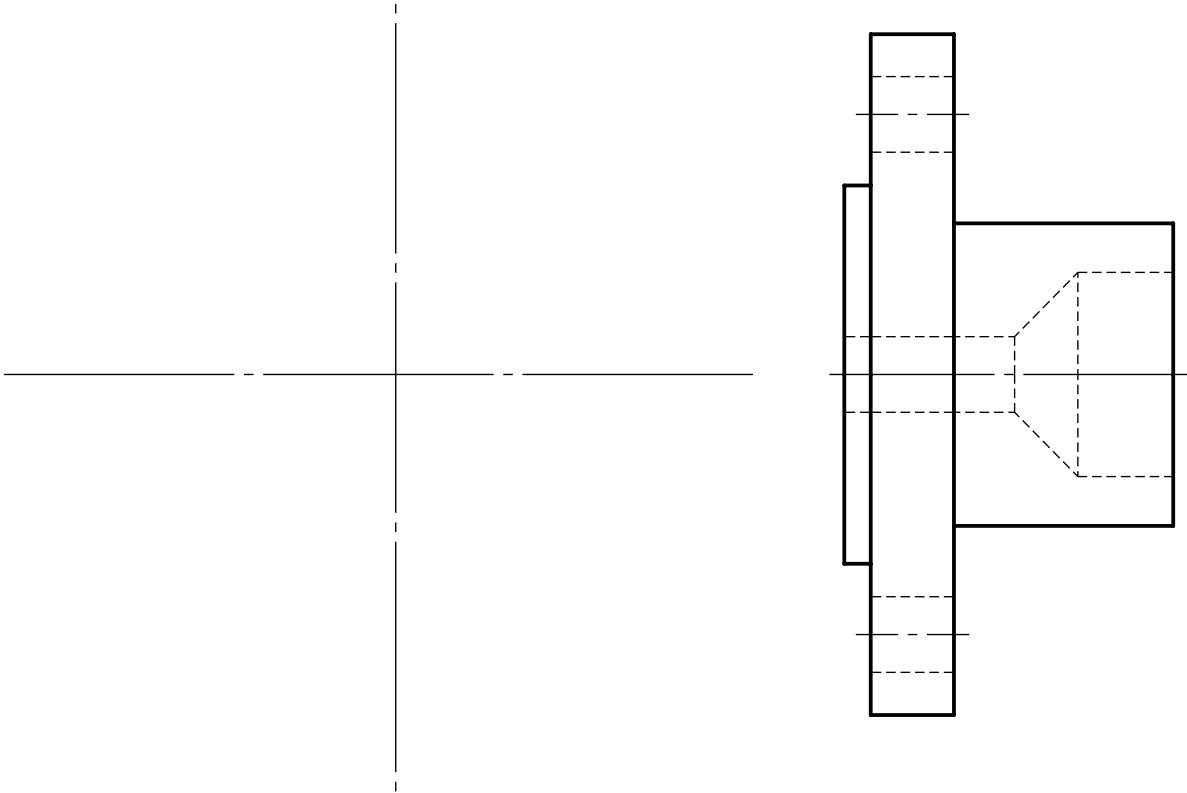

Préparatory cycle
Gr

ESSA. TLEMCEN
PROJECTION N°15

Scale : 1/1
Name
Ferst name



Draw the right-side view.



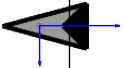
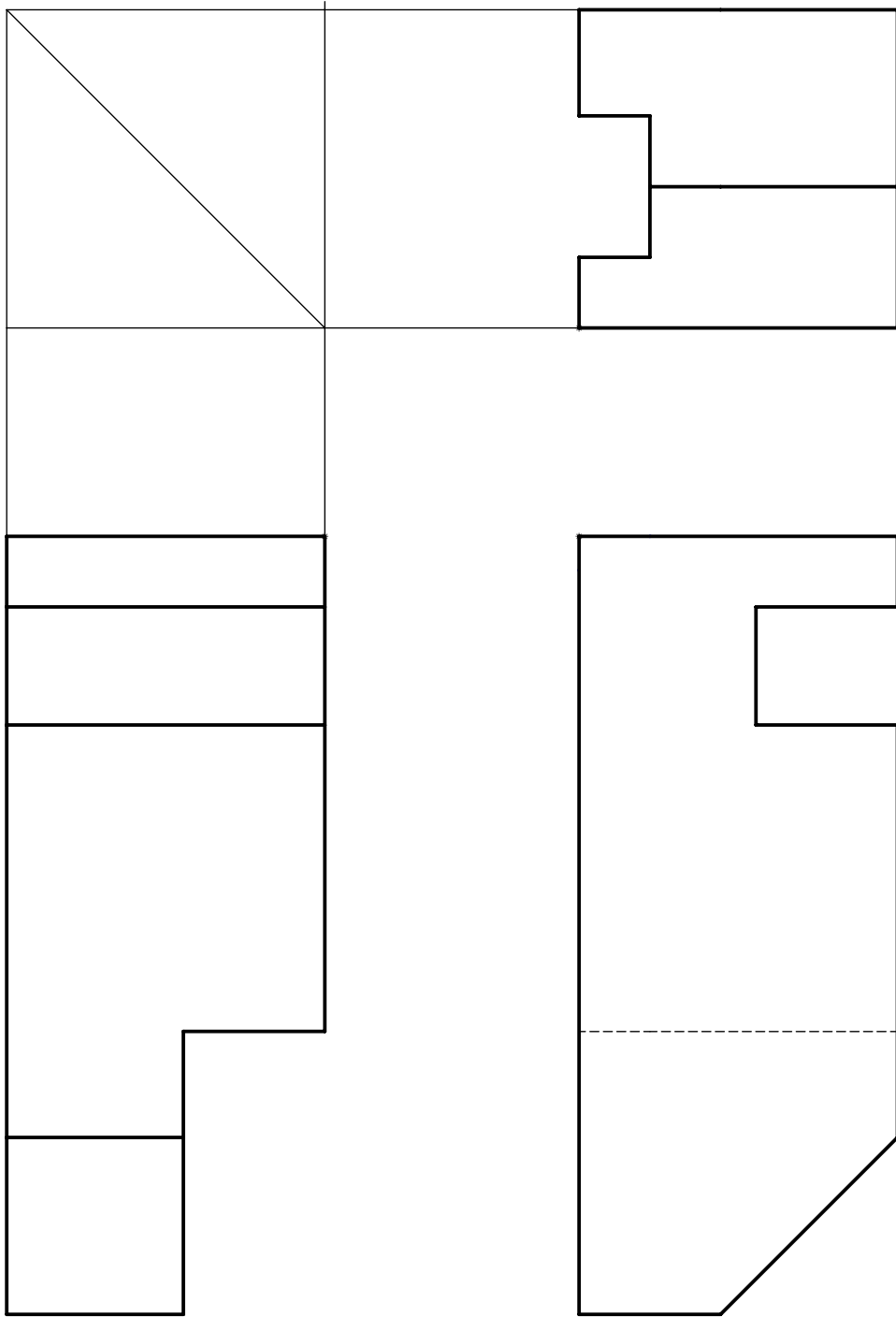
Préparatory cycle
Gr:

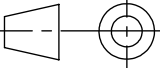
ESSA.TLEMCEN
PROJECTION N°16

Scale : 1/2
Name:
FirstName:

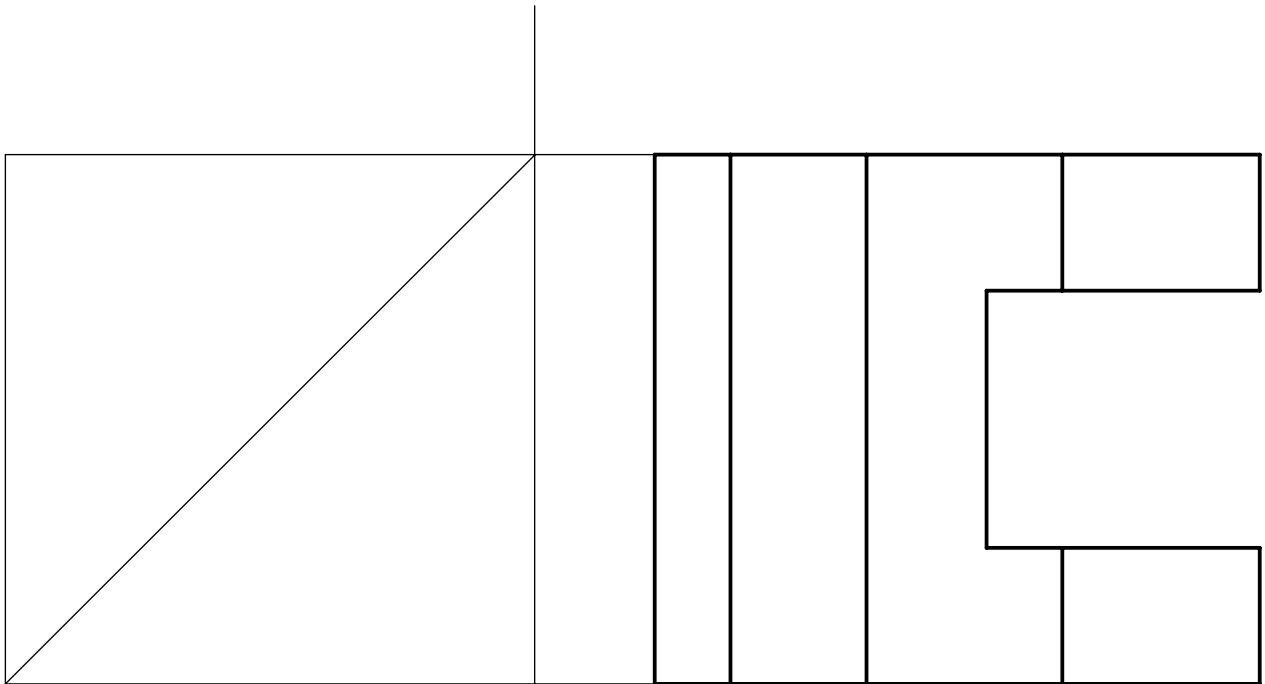
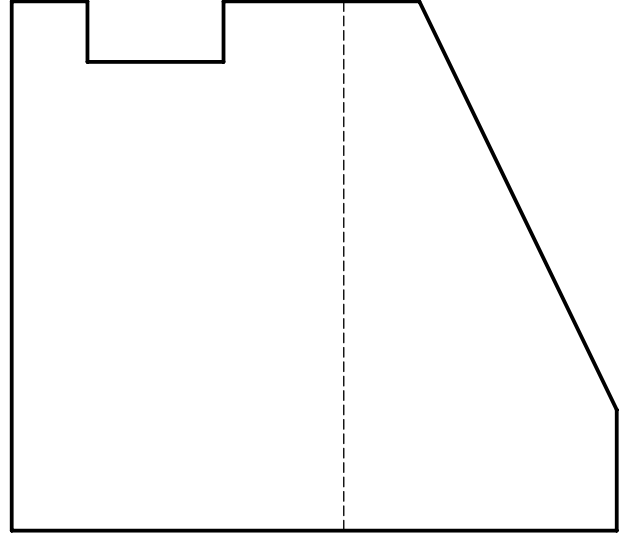
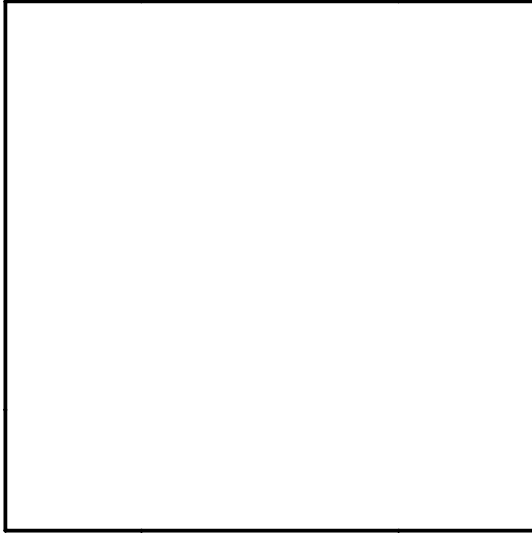


Complete the three views in the next room.



	<p>ESSA.TLEMCEN</p>	<p>Scale 1/1</p>
<p>Preparatory cycle</p>	<p>PROJECTION N°17</p>	<p>Name</p>
<p>Gr:</p>		<p>first name</p>

Draw the right view.



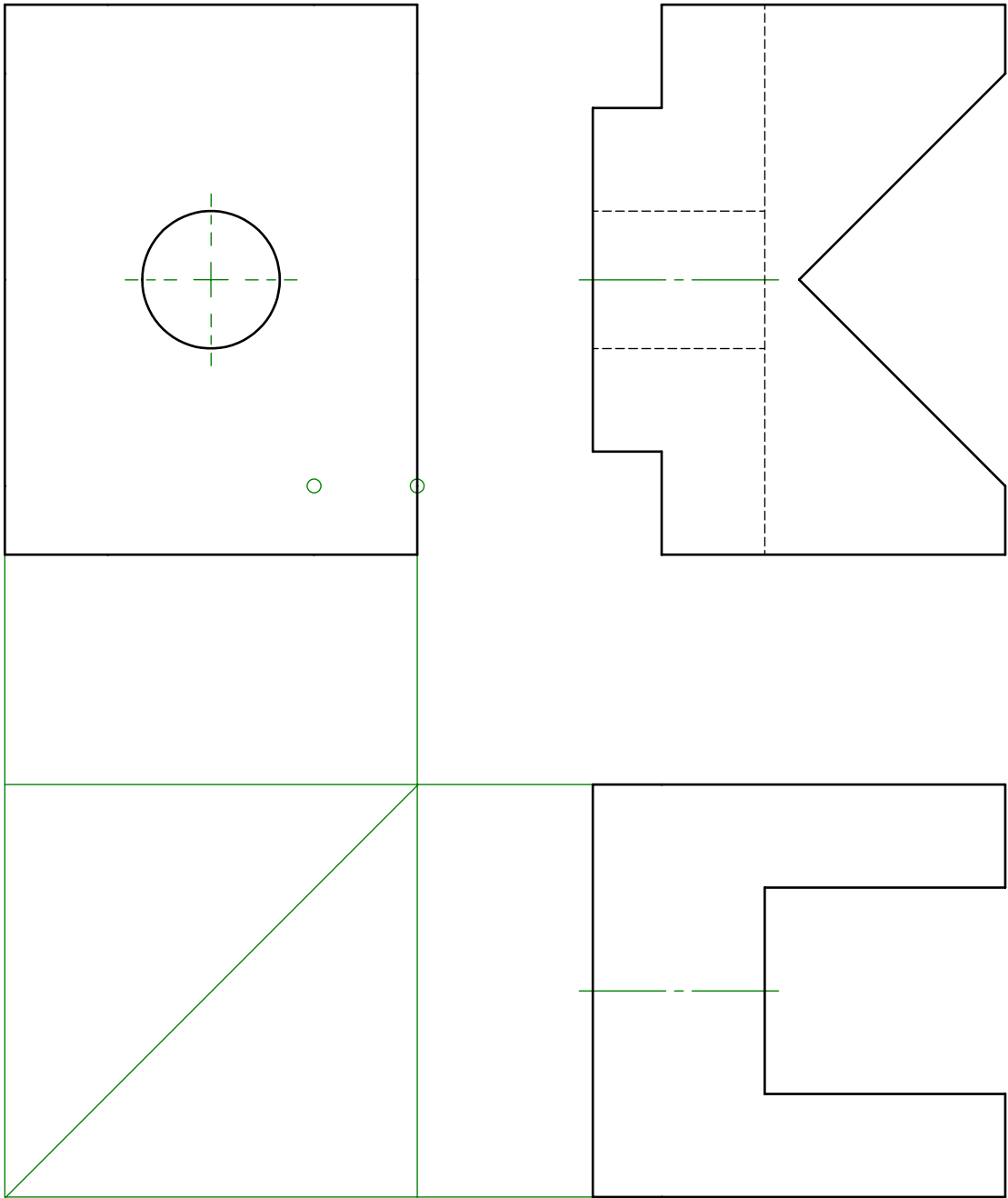
Préparatory cycle
Gr:

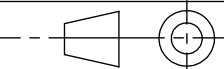
ESSA. TLEMCEM
PROJECTION N°18

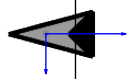
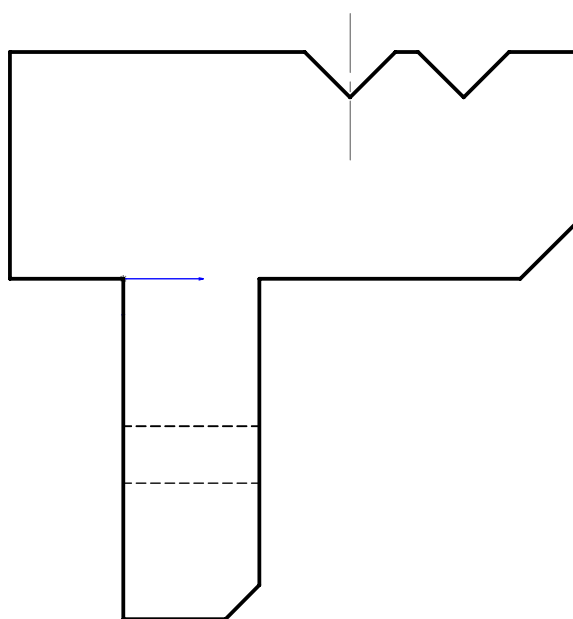
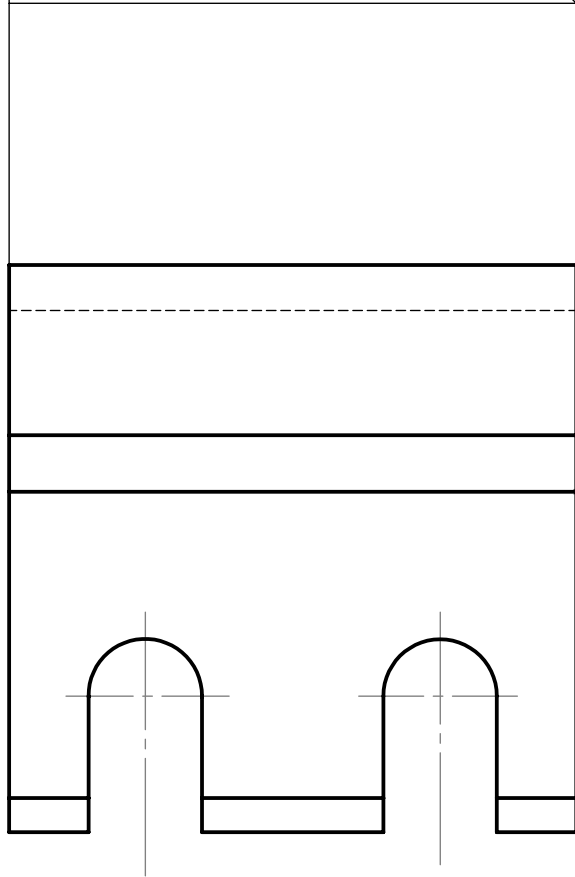
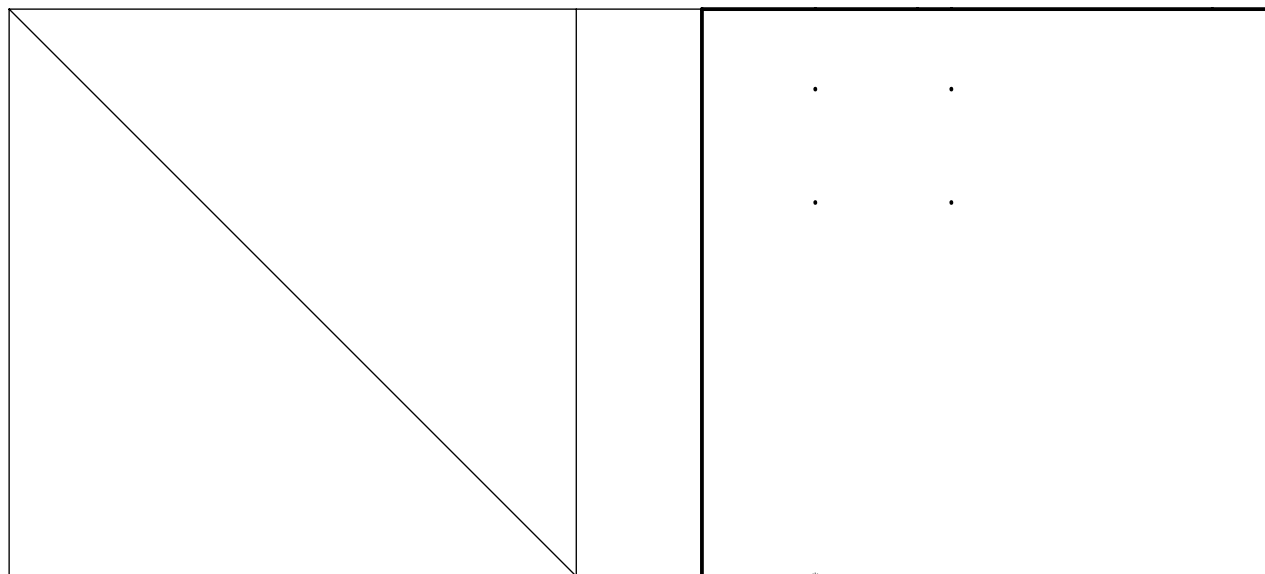
Scale : 1/1
Name:
FirstName:



Finish drawing the left view and the top view.



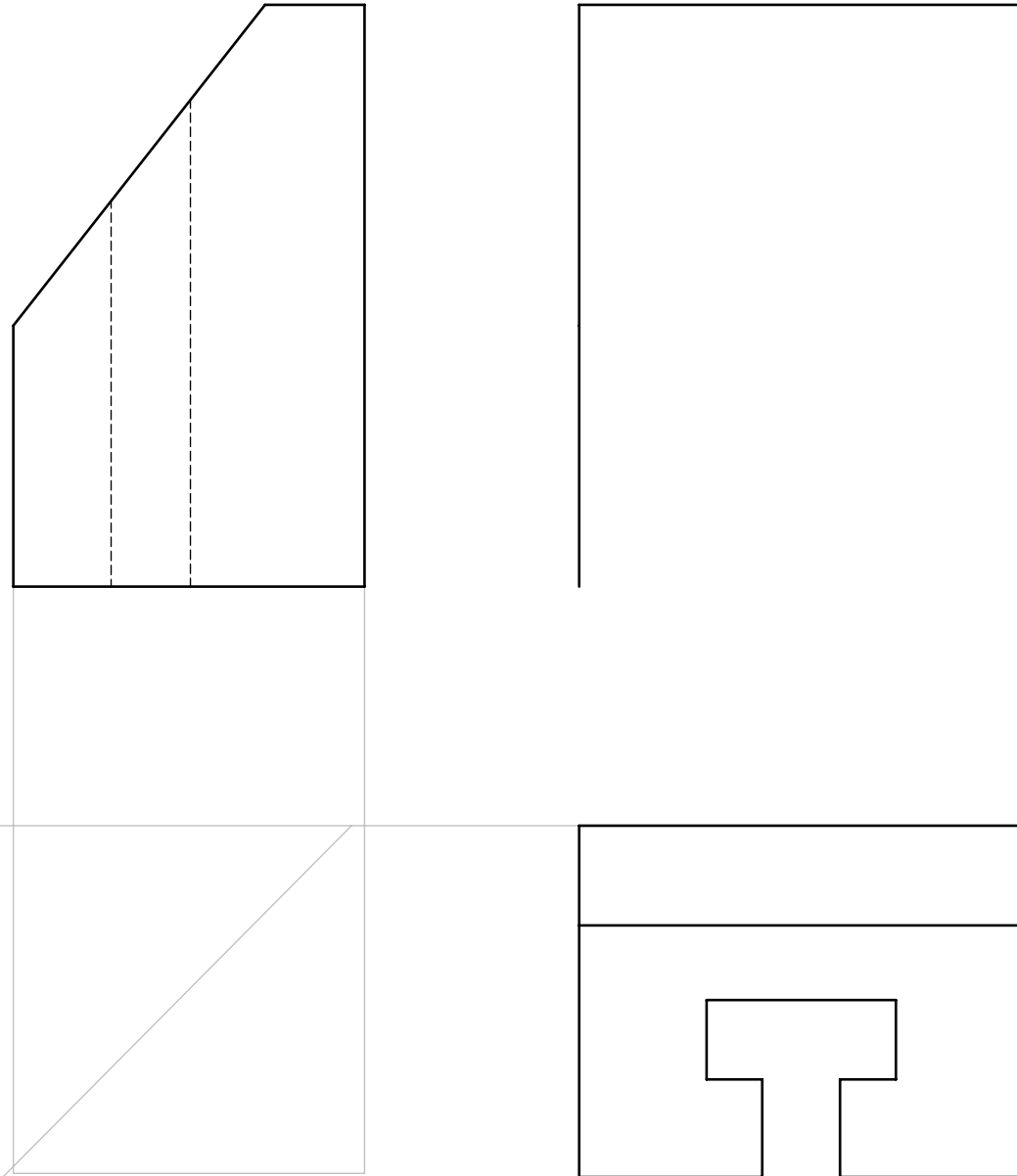
	<p>ESSA.TLEMCEN</p>	<p>Scale 1/1</p>
<p>Preparatory cycle</p>	<p>PROJECTION N°19</p>	<p>Name</p>
<p>Gr:</p>		<p>first name</p>




Draw the view on the right.

	<p>ESSA.TLEMCEN</p>	<p>Scale 1/1</p>
<p>Preparatory cycle</p>	<p>PROJECTION N°20</p>	<p>Name</p>
<p>Gr:</p>		<p>first name</p>

Draw the front view.

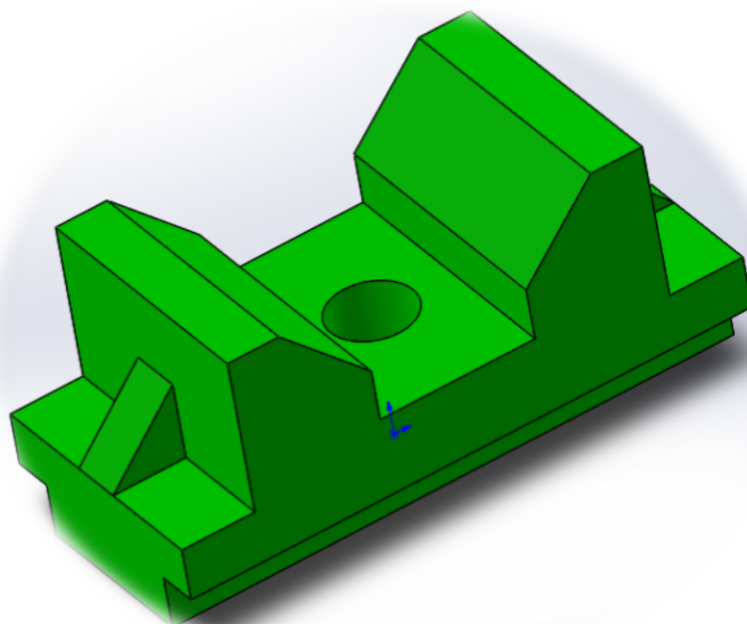



Préparatory cycle
Gr:

ESSA . TLEMCEN
PROJECTION N°21

Scale : 1/1
Name:
FirstName:





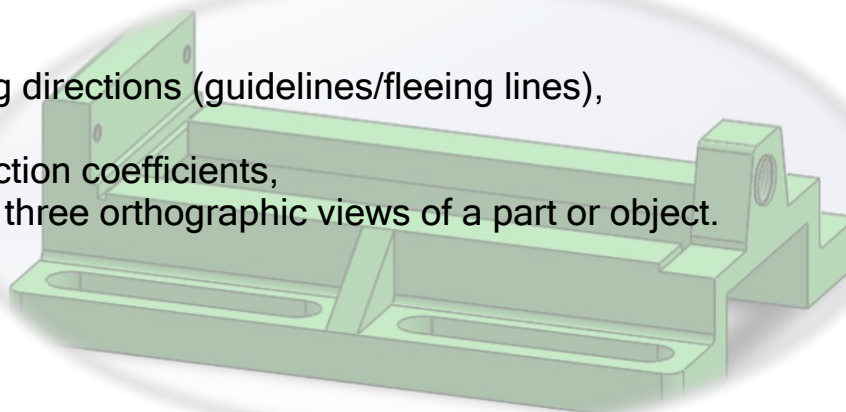
PERSPECTIVES

Objective of this Exercise Series

The goal of this series of exercises is to draw cavalier and isometric perspectives, respecting:

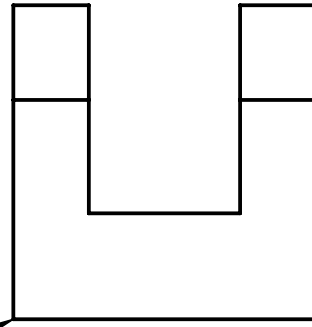
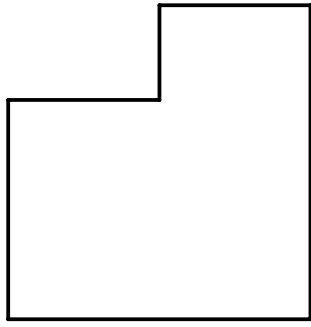
The vanishing directions (guidelines/fleeing lines),

And the reduction coefficients,
based on the three orthographic views of a part or object.

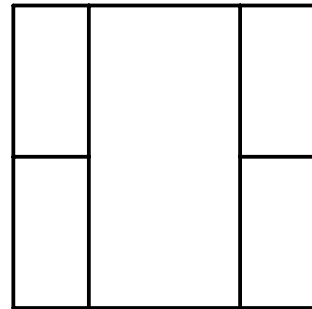


Draw the cavalier perspective from the following views at full scale (1:1).

40



A



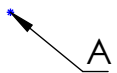
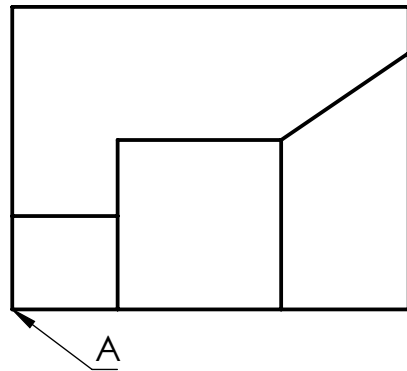
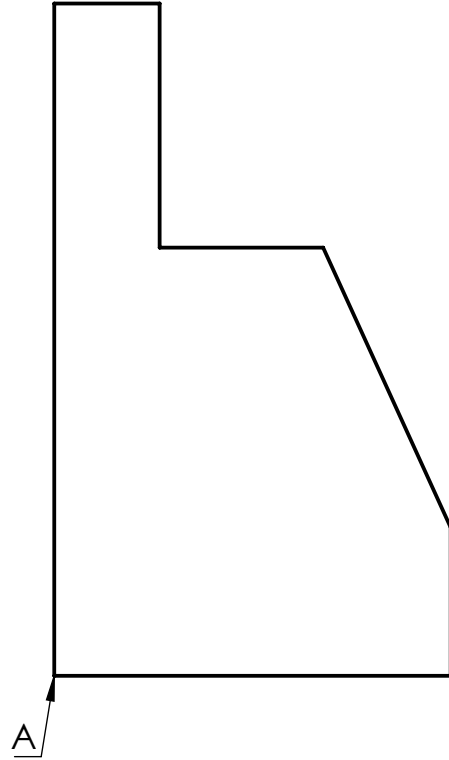
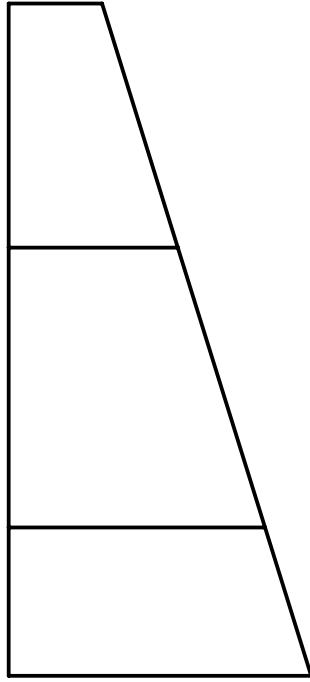
Préparatory cycle
Gr:

ESSA.TLEMCEN
PERSPECTIVE N°1

Scale : 1/2
Name:
FirstName:



Draw the cavalier perspective from the following views. **41**



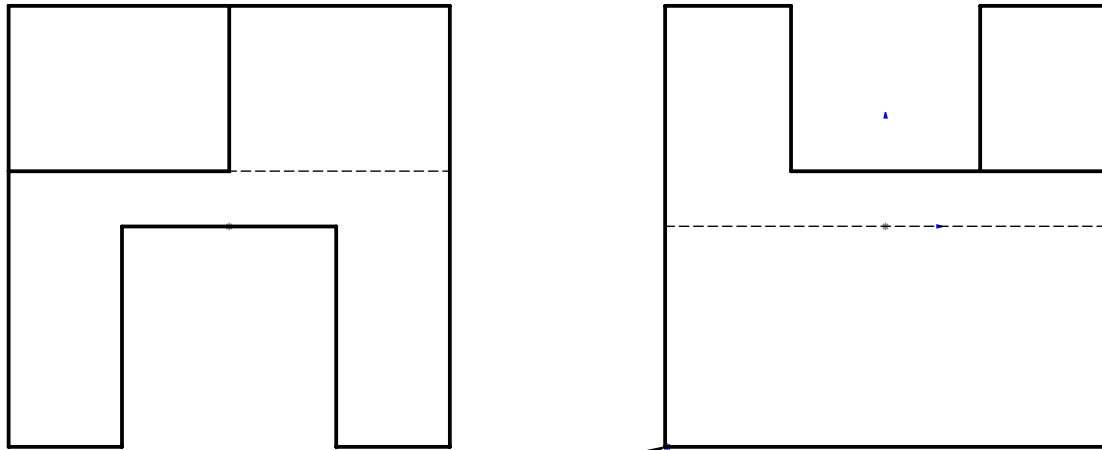
Préparatory cycle
Gr:

ESSA.TLEMCEN
PERSPECTIVE N°2

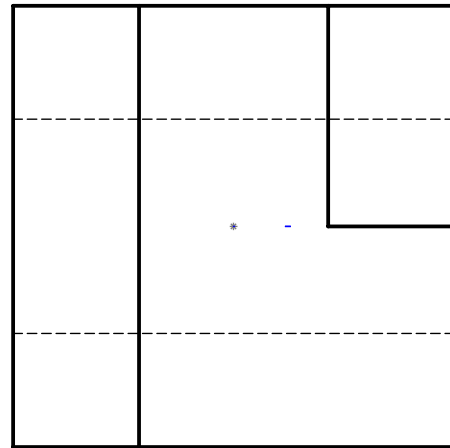
Scale : 1/1
Name:
FirstName:




Exercise : Draw the cavalier perspective of the piece below.

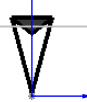


A

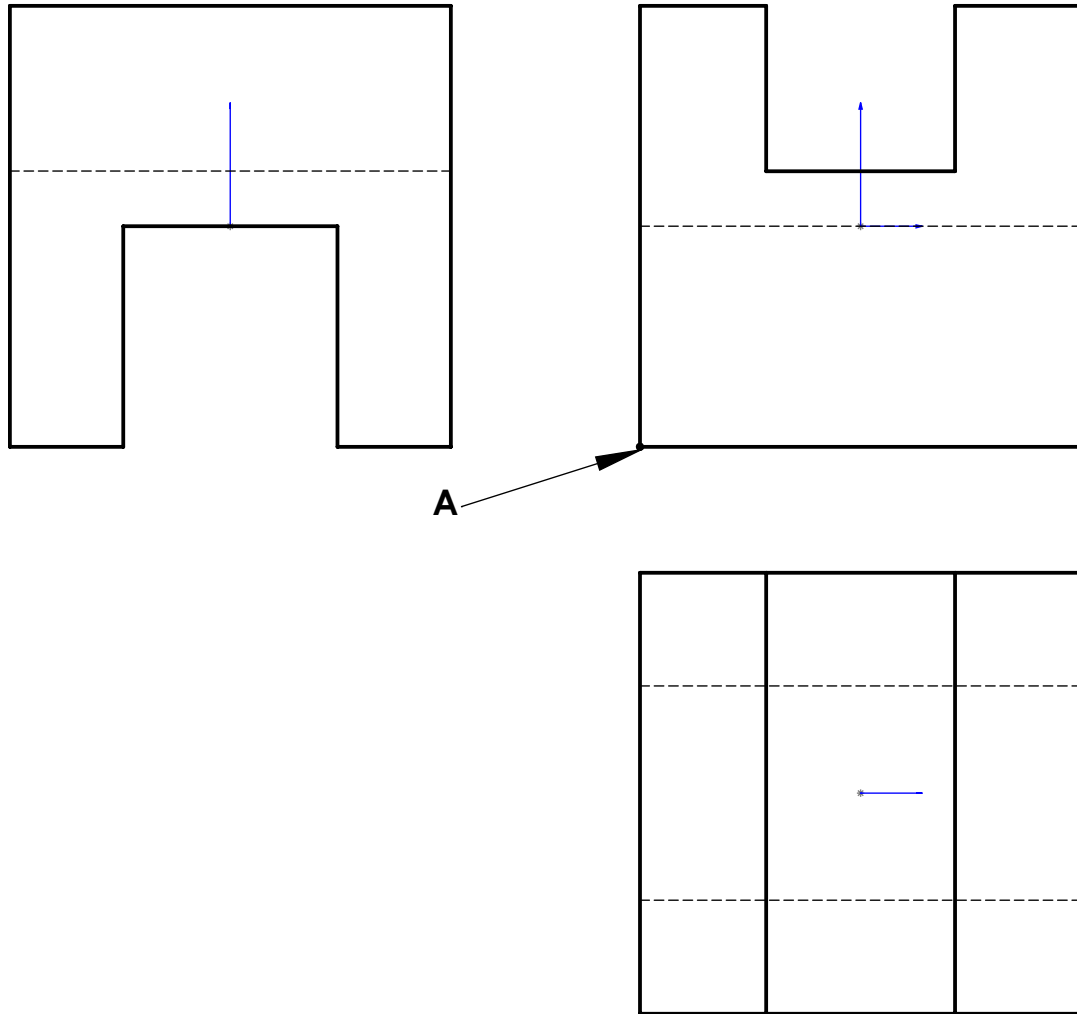


A *

	ESSA . TLEMCEN	Scale: 1/1
Preparatory cycle	PERSPECTIVE N°3	Name:
Sc: Gr:		First name:



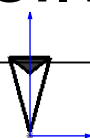
Draw the cavalier perspective of the piece below.



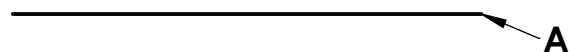
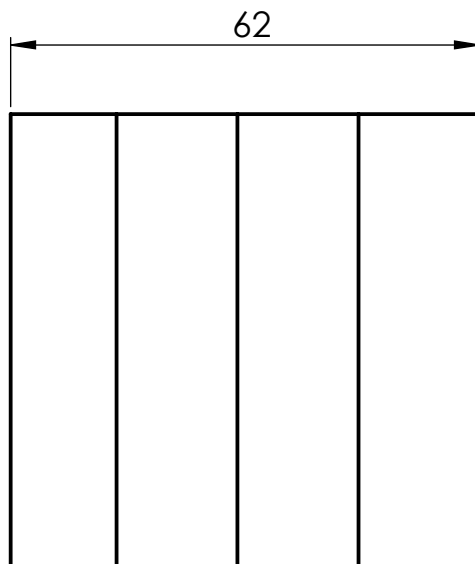
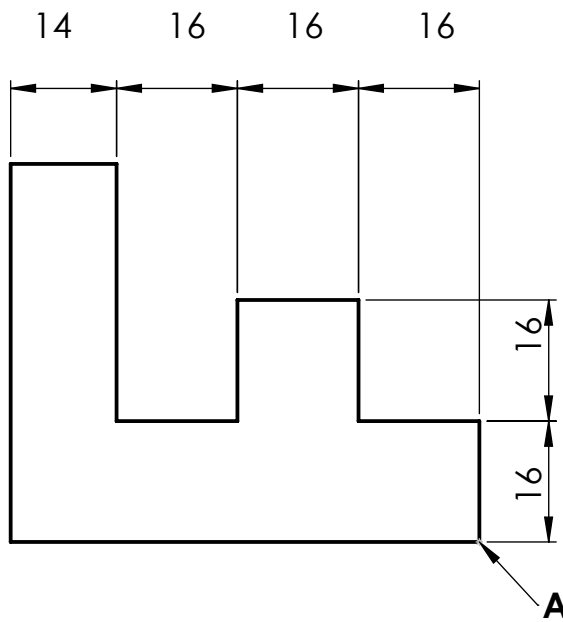
A

A*

	<p>ESSA.TLEMCEN</p>	<p>Scale : 1/1</p>
<p>Préparatory cycle</p>	<p>PERSPECTIVE N°4</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>



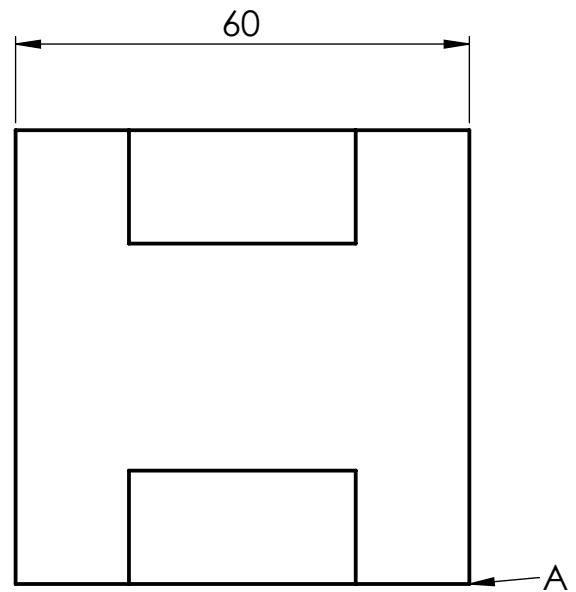
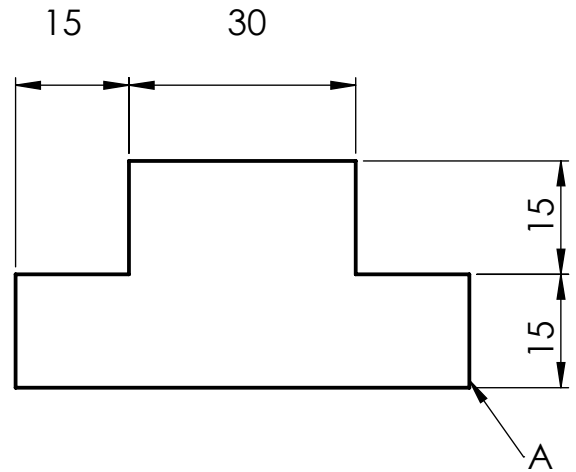
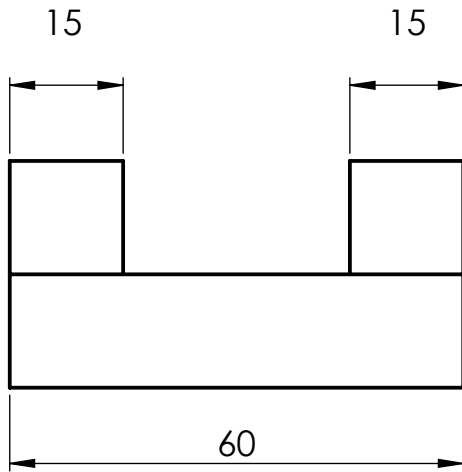
Draw the cavalier perspective at a 1:1 scale of the part shown below..



	<p>ESSA.TLEMCEN</p>	<p>Scale : 1/1</p>
<p>Préparatory cycle</p>	<p>PERSPECTIVE N°5</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>



Draw the cavalier perspective at a 1:1 scale of the part shown below..

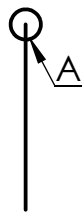
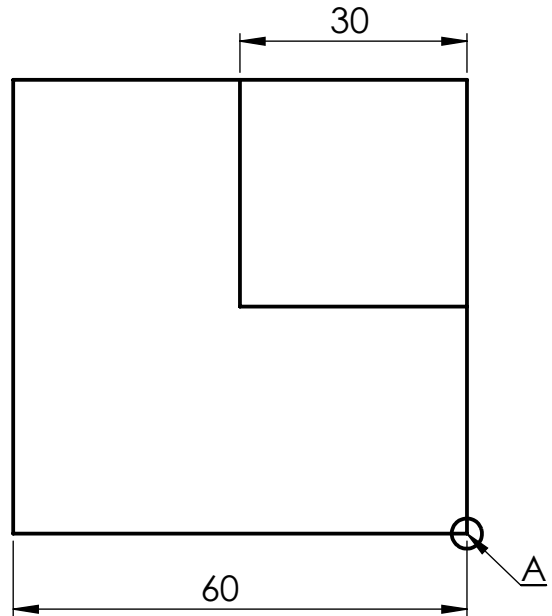
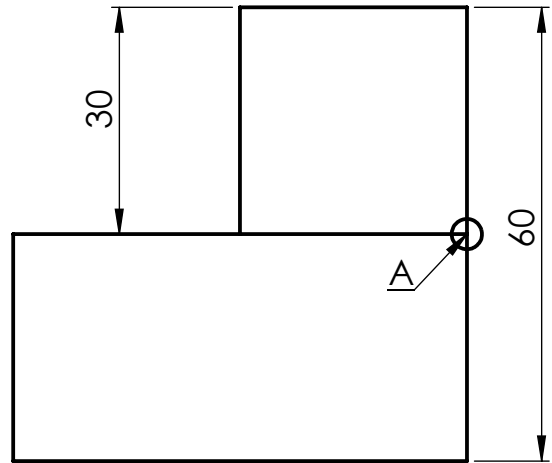
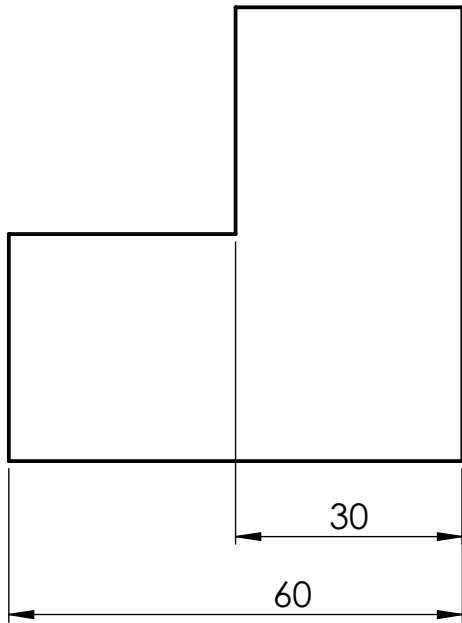


	<p>ESSA.TLEMCEN</p>	<p>Scale : 1/1</p>
<p>Préparatory cycle</p>	<p>PERSPECTIVE N°6</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>



Draw the isometric perspective (K=1) of the room below.

46

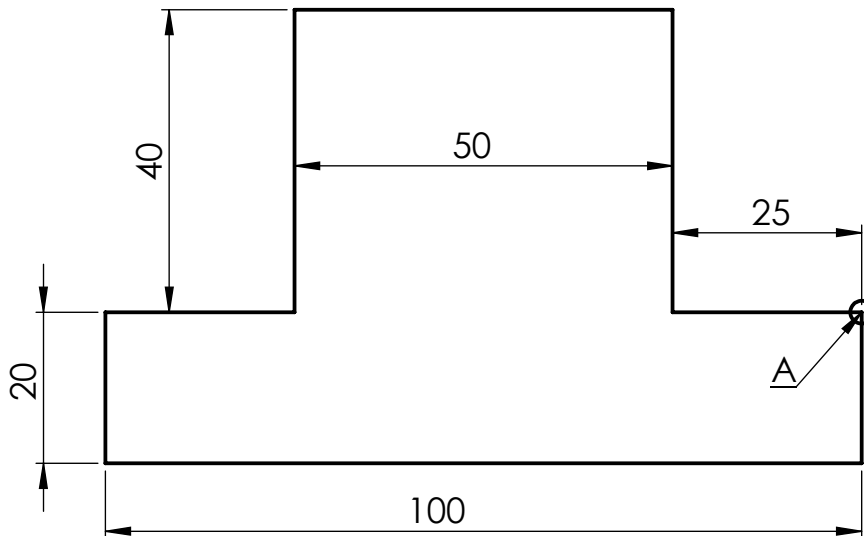
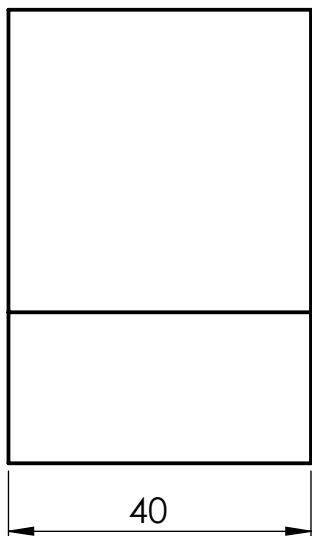


Préparatory cycle
Gr:

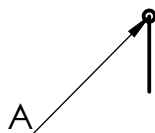
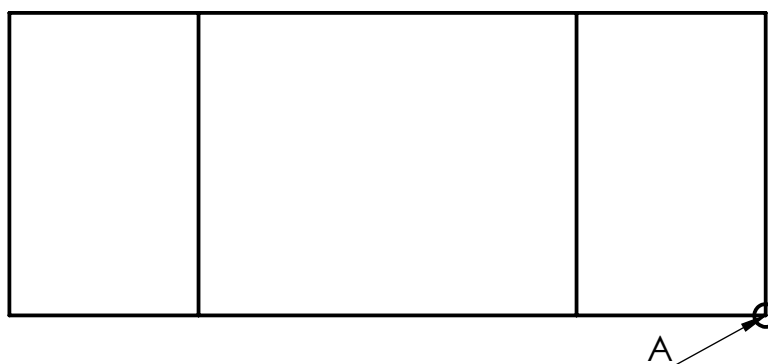
ESSA . TLEMCEN
PERSPECTIVE N°7

Scale : 1:1
Name:
FirstName:





Draw the isometric perspective (K=1) of the room below.



Préparatory cycle
Gr:

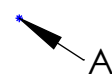
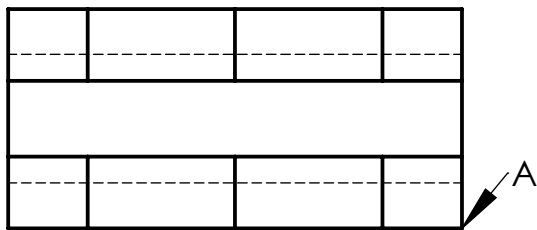
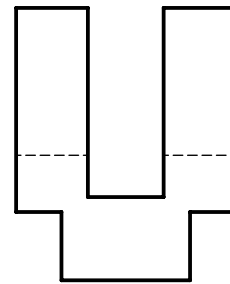
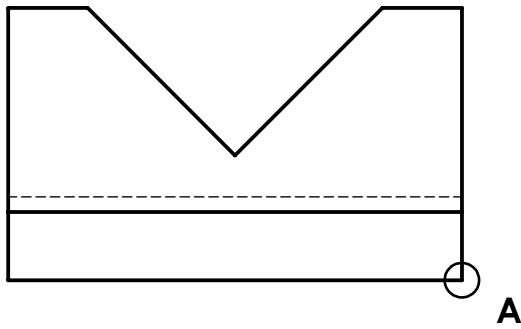
ESSA . TLEMCEN
PERSPECTIVE N°8

Scale : 1:1
Name:
FirstName:



The next three views represent a 1/2 scale vee Front view Right view Top view

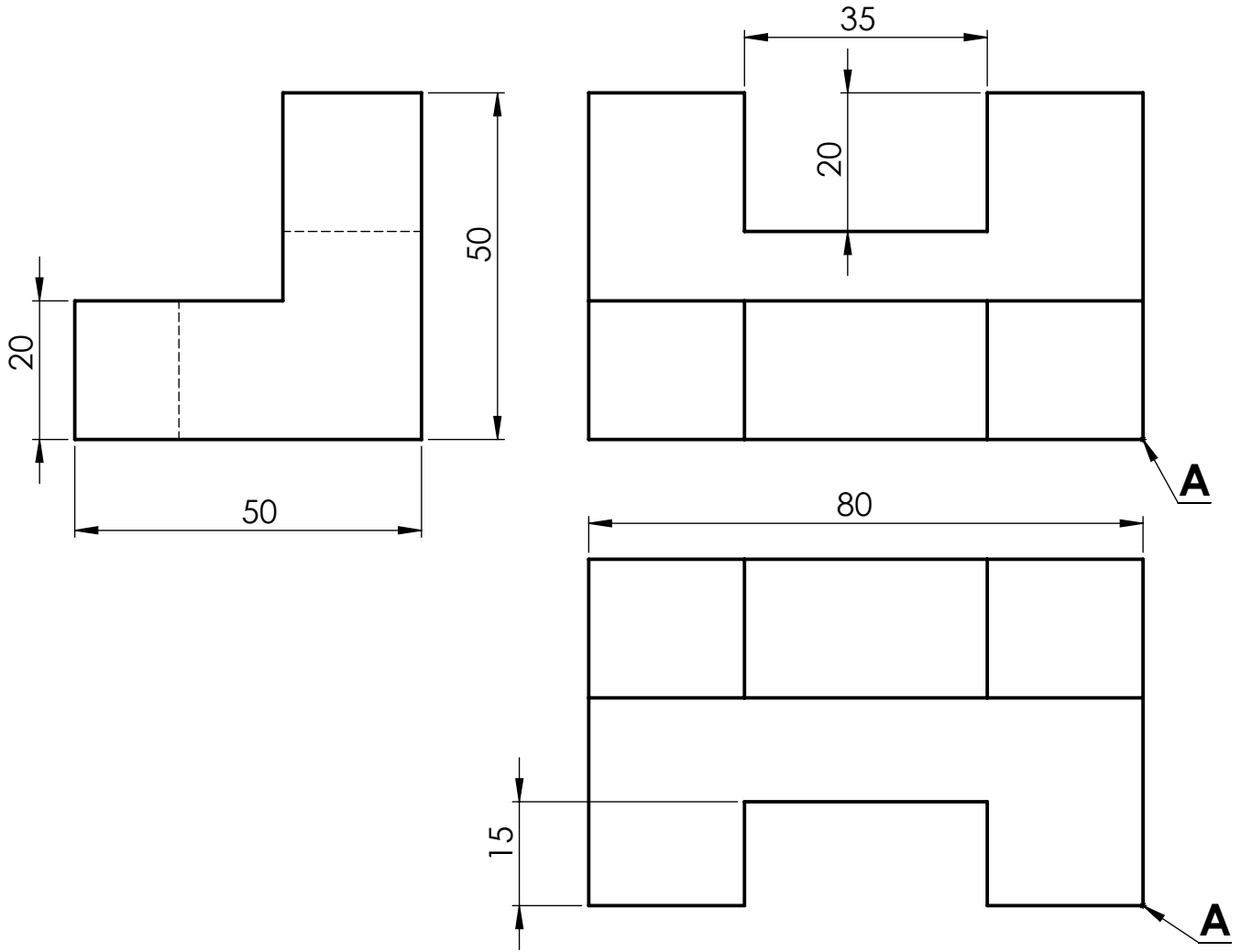
Draw the vee on a scale of 1:1 in perspective Cavalière



	ESSA.TLEMCEN	Scale : 1/1
Préparatory cycle	PERSPECTIVE N°9	Name:
Gr:		FirstName:



Draw the isometric perspective of the piece below K=1.



A

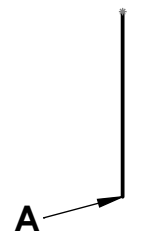
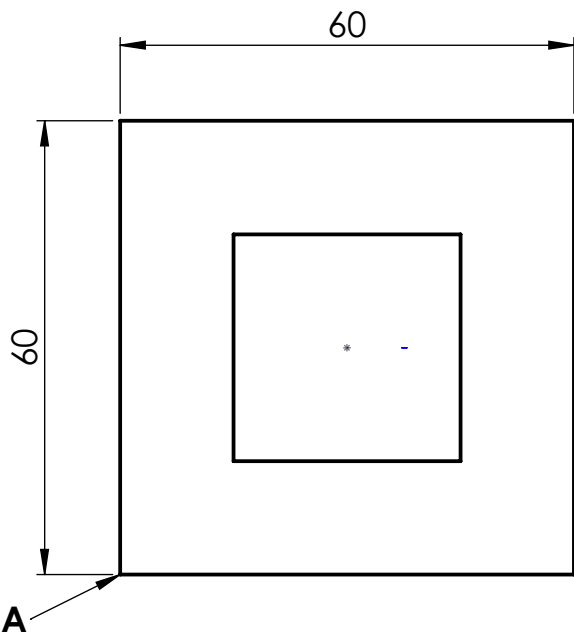
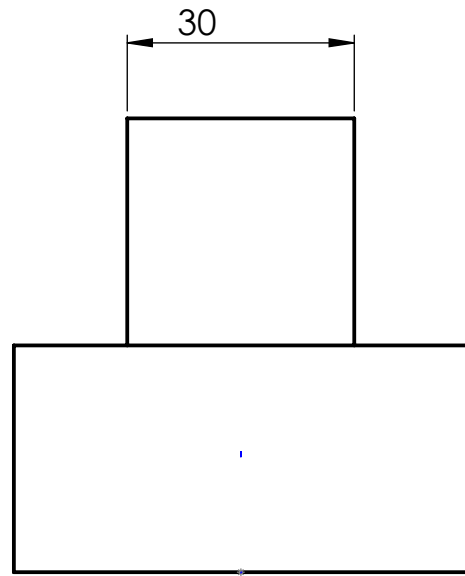
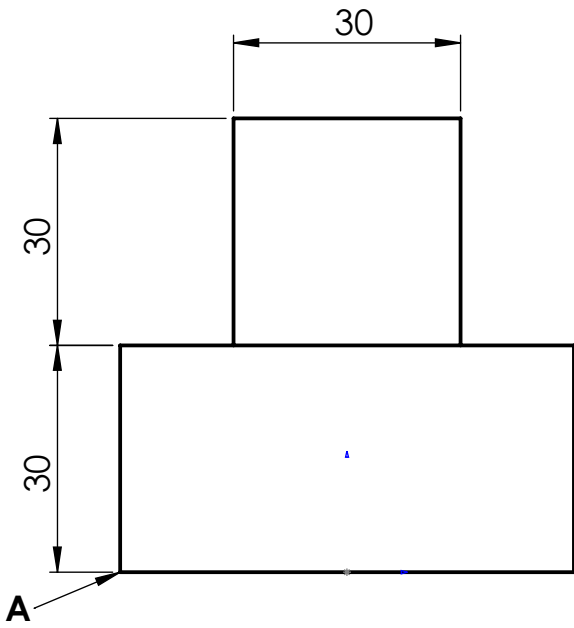
Préparatory cycle	
Gr:	

<p>ESSA.TLEMCEN</p>	
<p>PERSPECTIVE N°10</p>	

Scale : 1:1
Name:
FirstName:

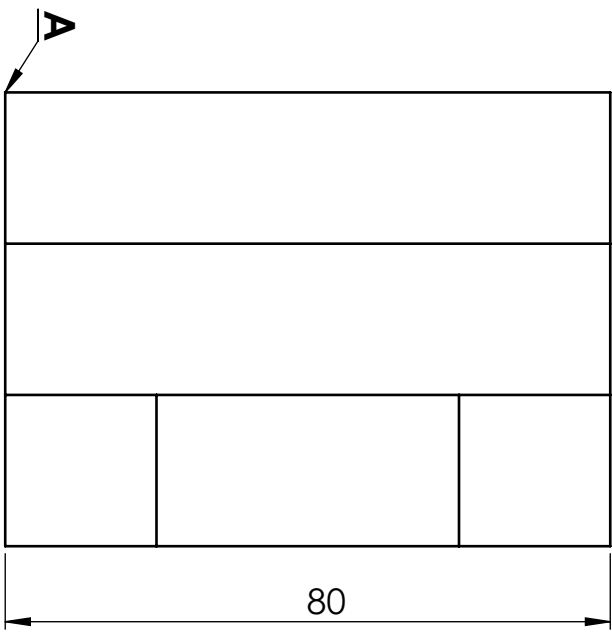
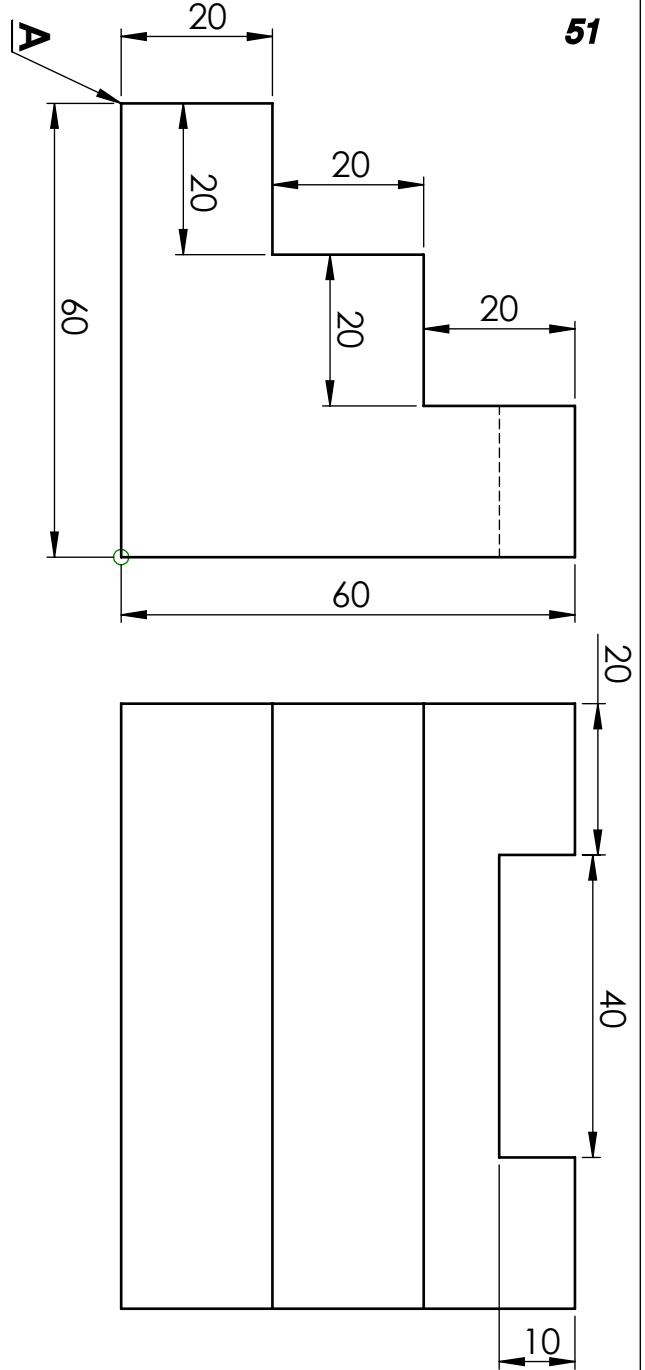


Draw the isometric perspective at a 1:1 scale of the part shown below..

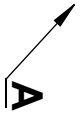


	<p>ESSA.TLEMCEN</p>	<p>Scale : 1/1</p>
<p>Préparatory cycle</p>	<p>PERSPECTIVE N°11</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>





Draw the isometric Perspective for $K=1$.



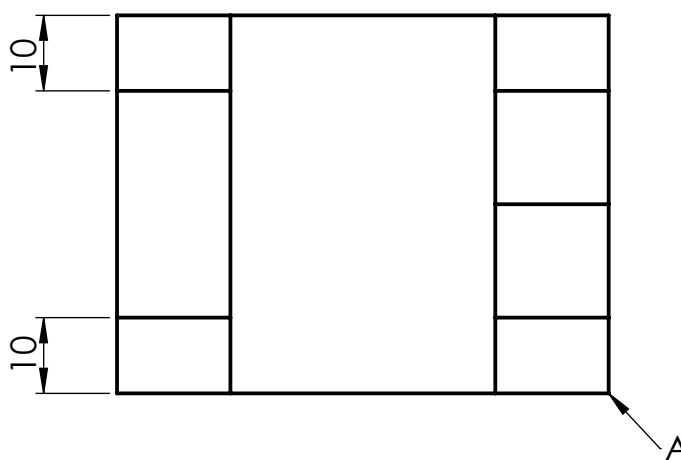
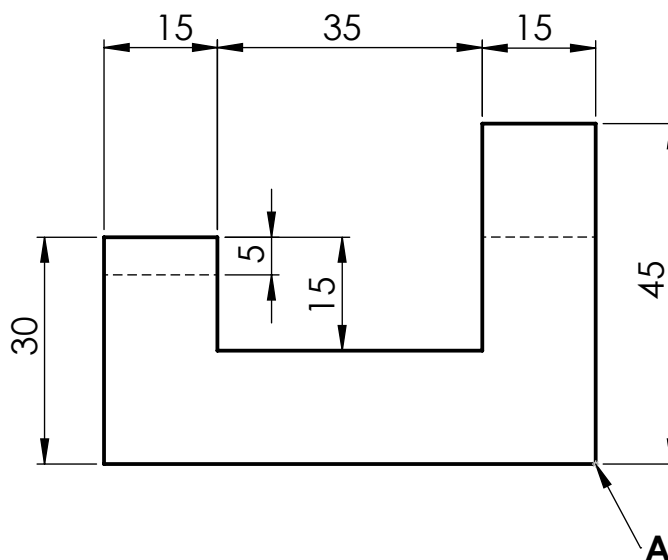
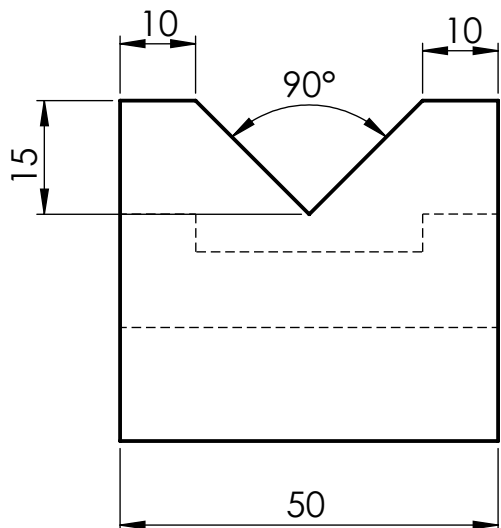
Preparatory cycle
Gr:

ESSA.TLEMCEN

PERSPECTIVE N°12

Scale 1/1
Name
first name

Draw the isometric Perspective for K=1.

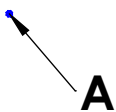
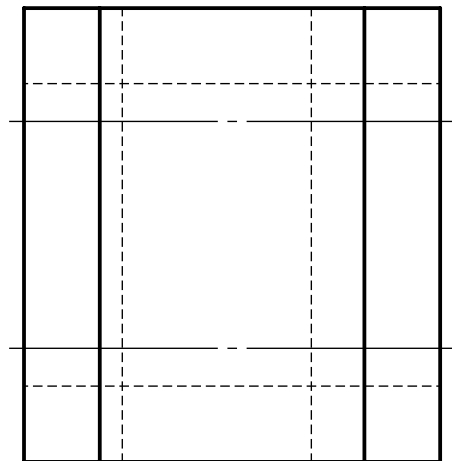
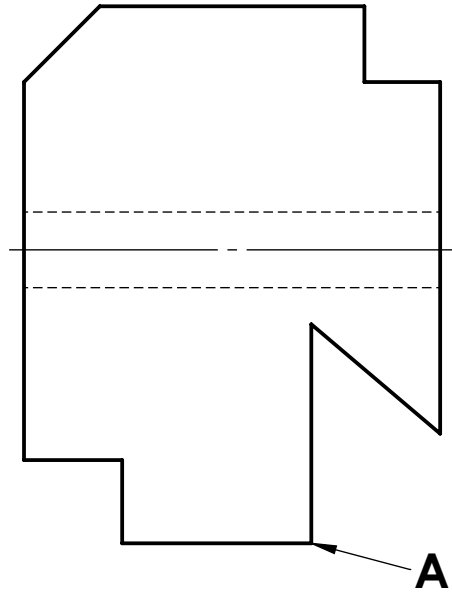
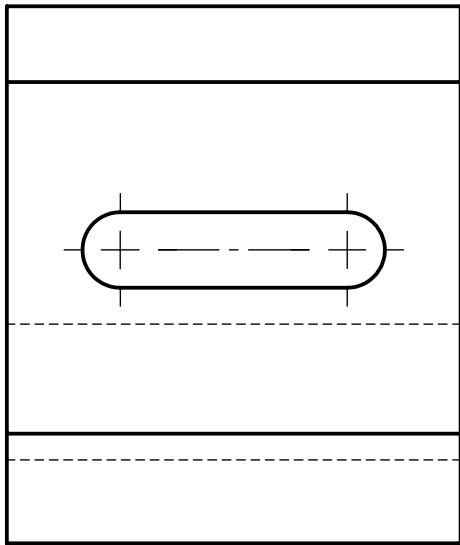


*
A

	<p>ESSA.TLEMCEN</p>	<p>Scale: 1/1</p>
<p>Preparatory cycle</p>	<p>PERSPECTIVE N°13</p>	<p>Name:</p>
<p>Sg: Gr:</p>		<p>First name :</p>



Draw the isometric perspective of the piece below K=1.

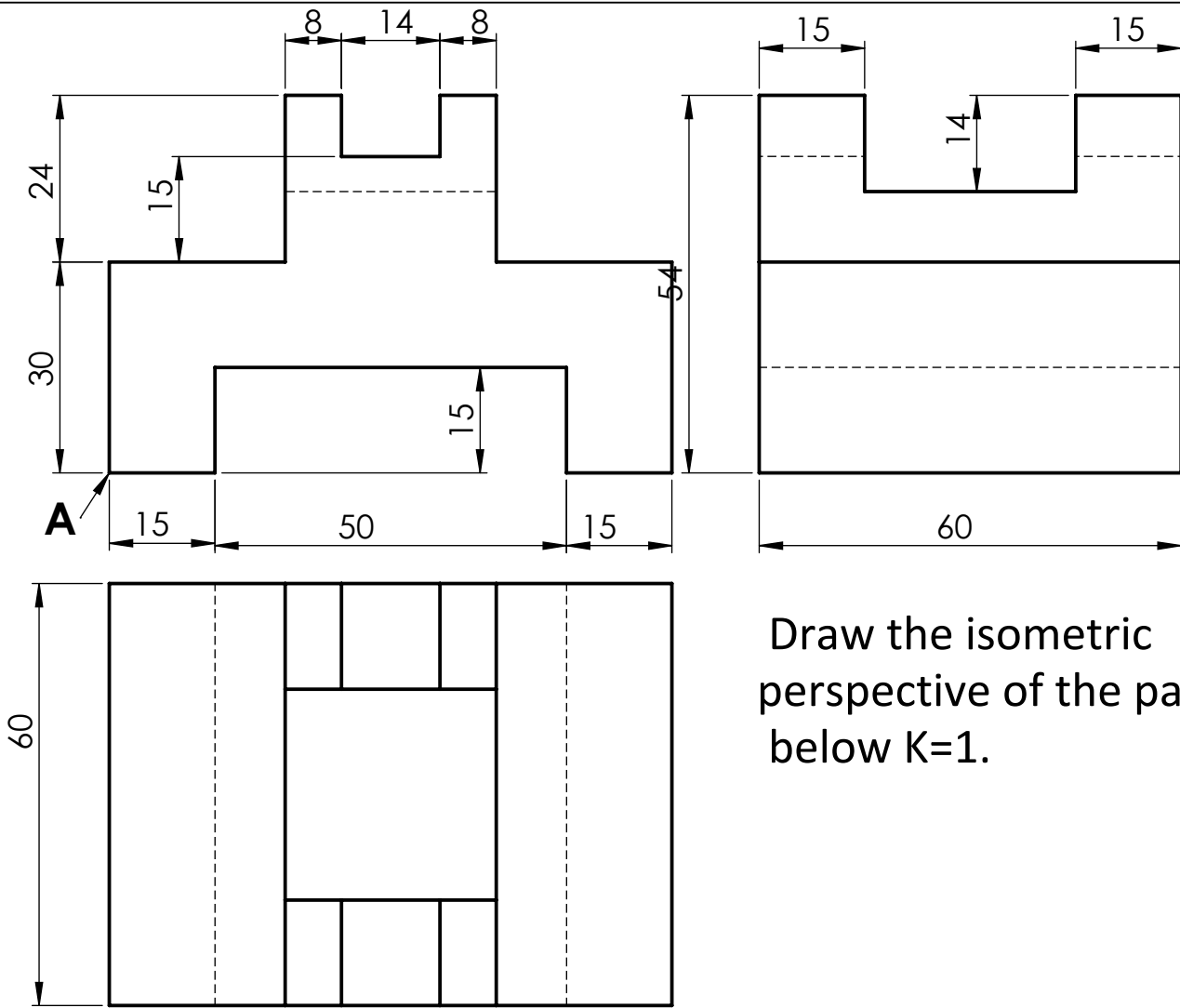


Préparatory cycle
Gr:

<p>ESSA.TLEMCEN</p> <p>PERSPECTIVE N°14</p>
--

Scale : 1/1
Name:
FirstName:



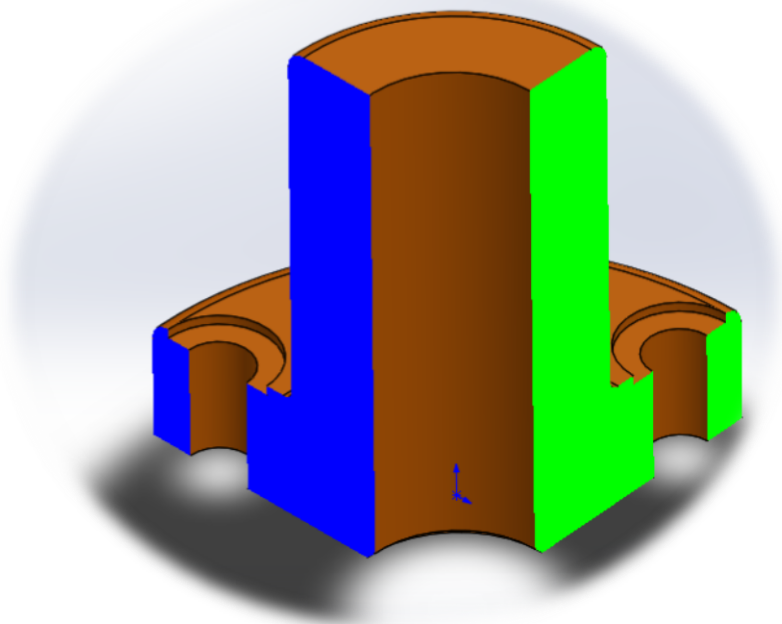


Draw the isometric perspective of the part below $K=1$.



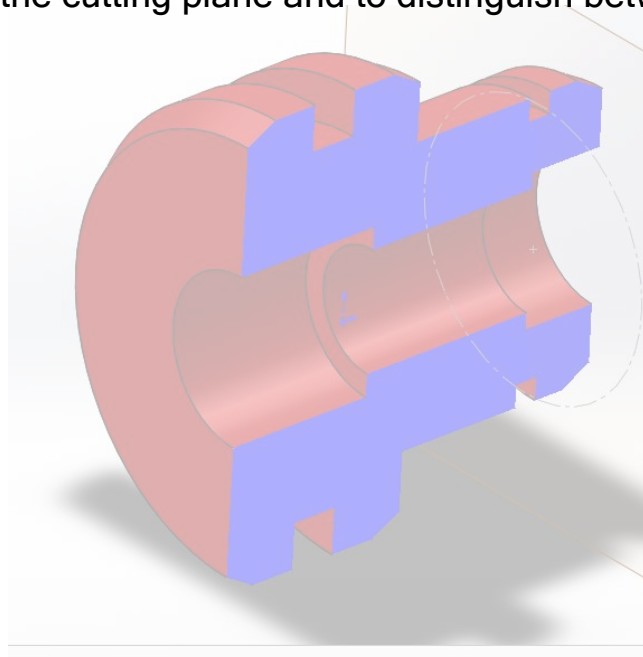
	<p>ESSA.TLEMCEN</p>	<p>Scale: 1/1</p>
<p>Preparatory cycle</p>	<p>PERSPECTIVE N°15</p>	<p>Name:</p>
<p>Sg: Gr:</p>		<p>First name :</p>



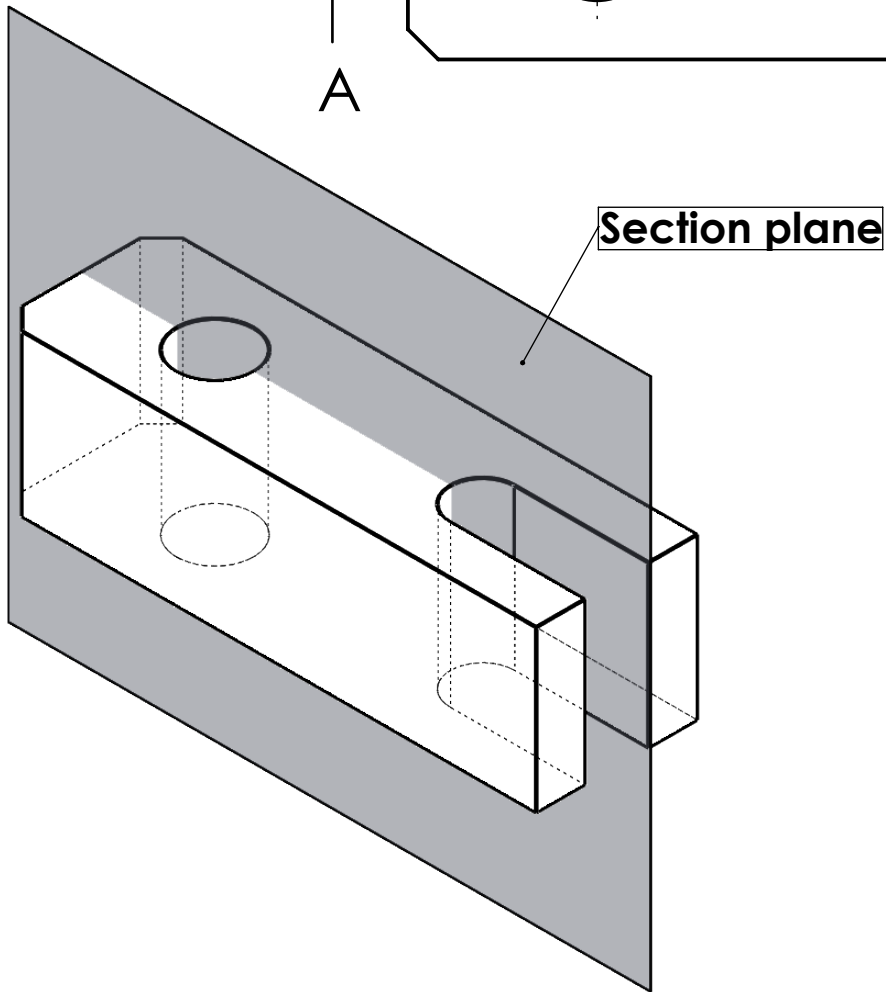
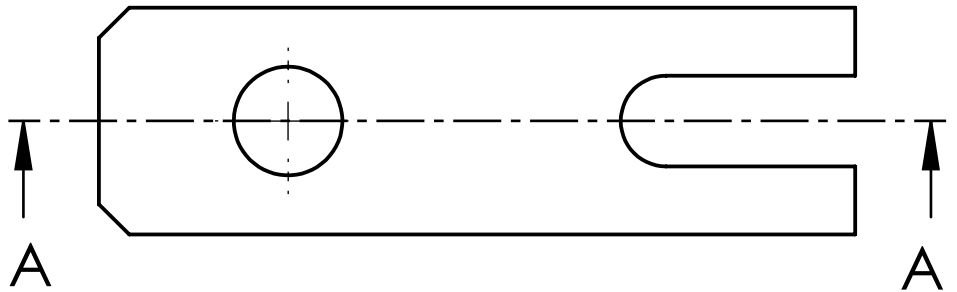
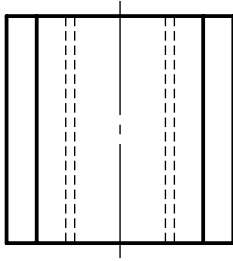


CUTS AND SECTIONS

The objective of this series of exercises is to draw sectional views based on the position of the cutting plane and to distinguish between solid and hollow (empty) parts.



Draw the front view in section A-A."



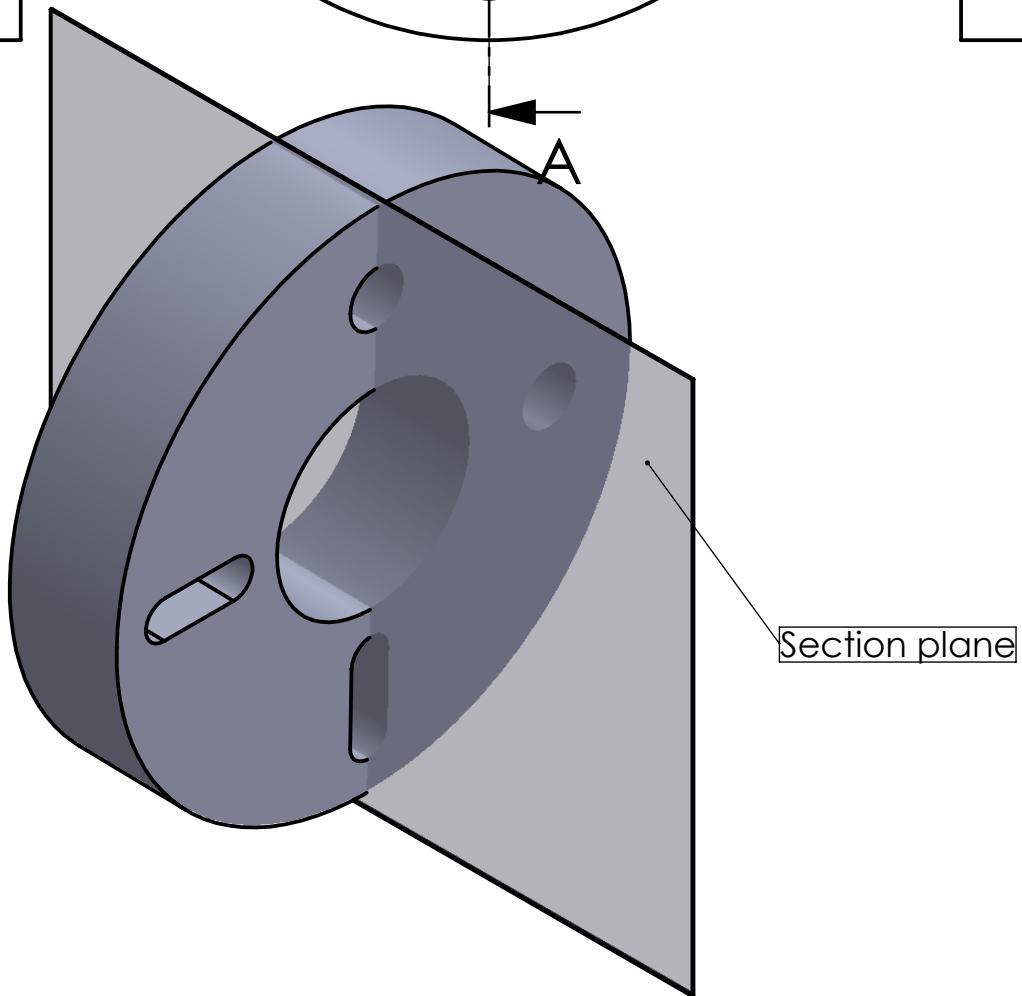
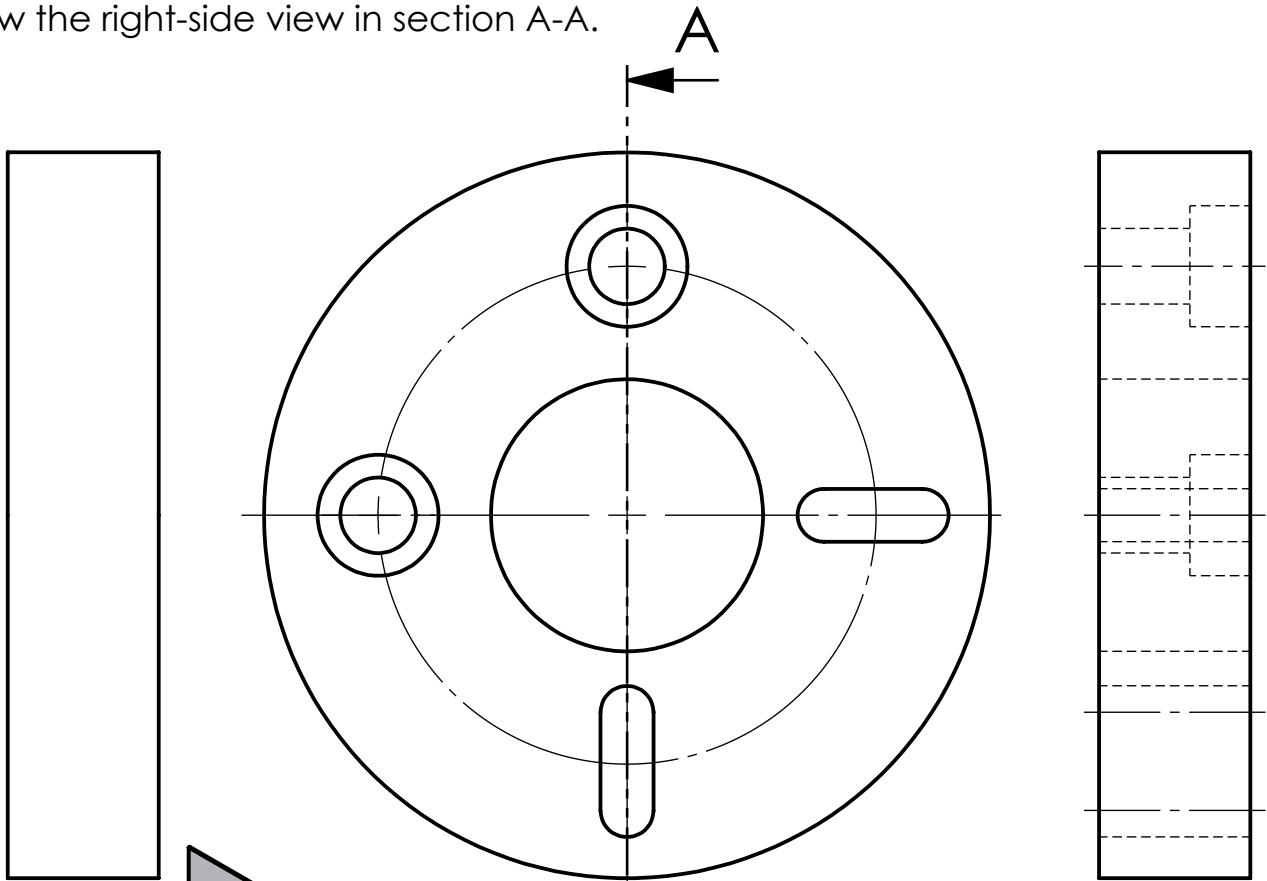
Préparatory cycle
Gr:

<p>ESSA.TLEMCEN</p> <p>SECTION N° 1</p>
--

Scale : 1/1
Name:
FirstName:



Draw the right-side view in section A-A.



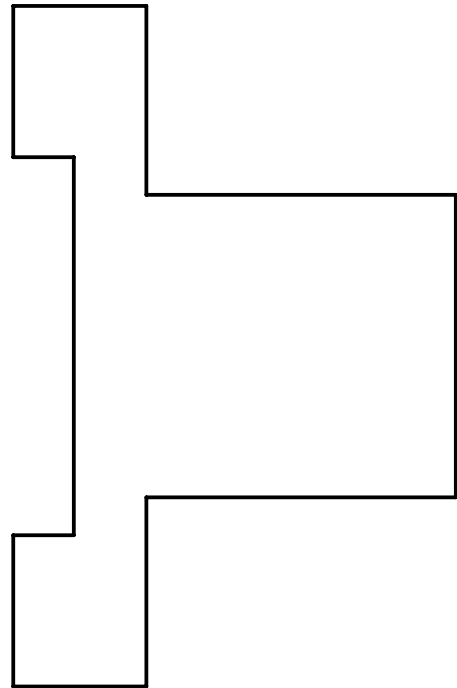
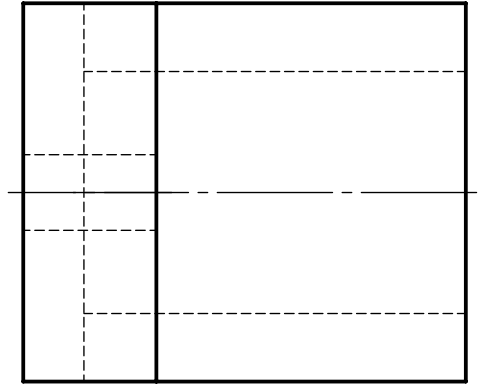
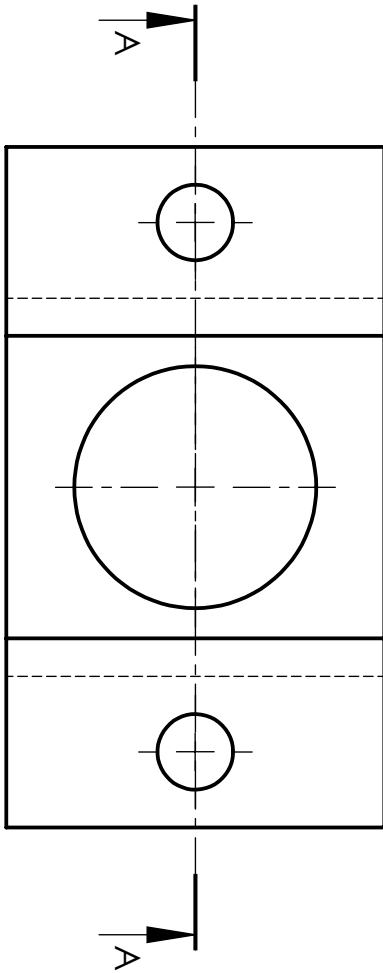
Préparatory cycle
Gr:

<p>ESSA.TLEMCEN</p> <p>SECTION N° 2</p>
--

Scale : 1/1
Name:
FirstName:



Draw the front view in section A-A

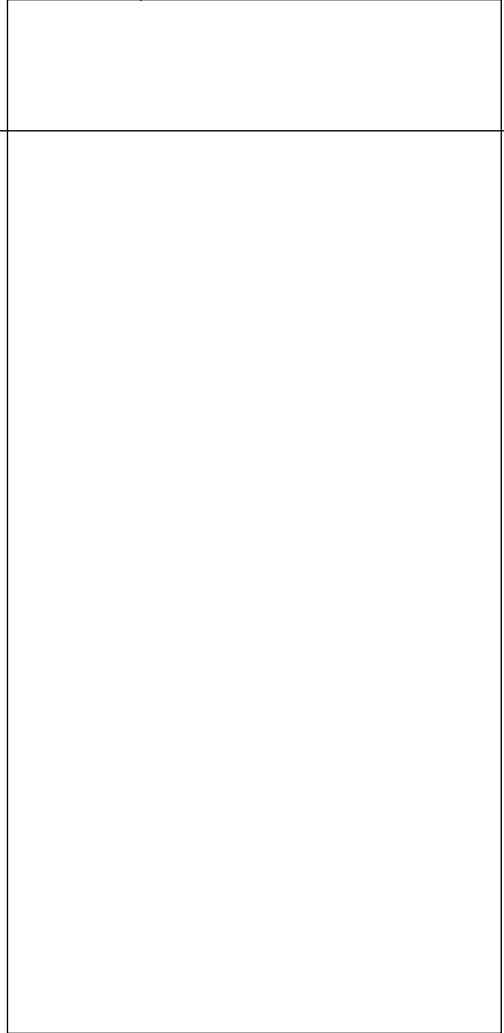
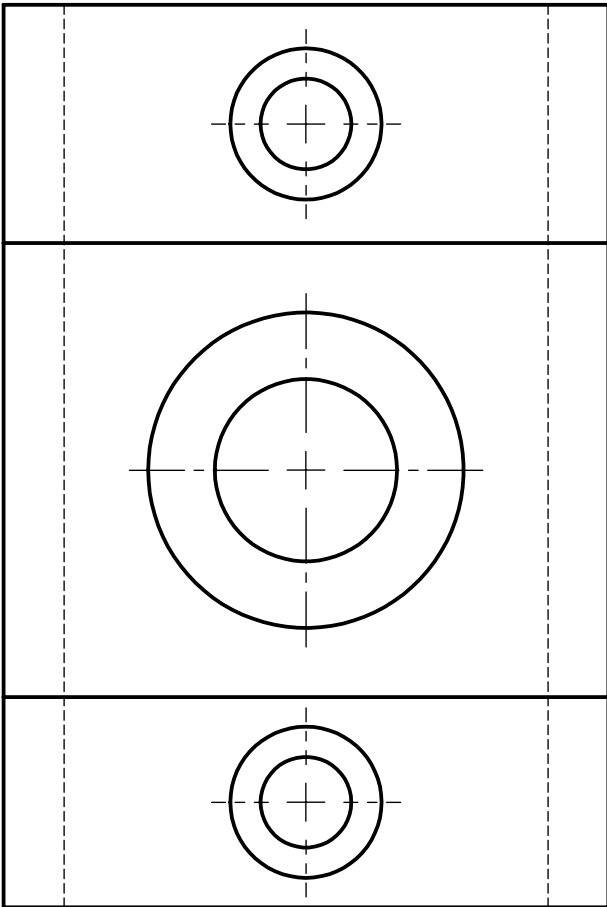
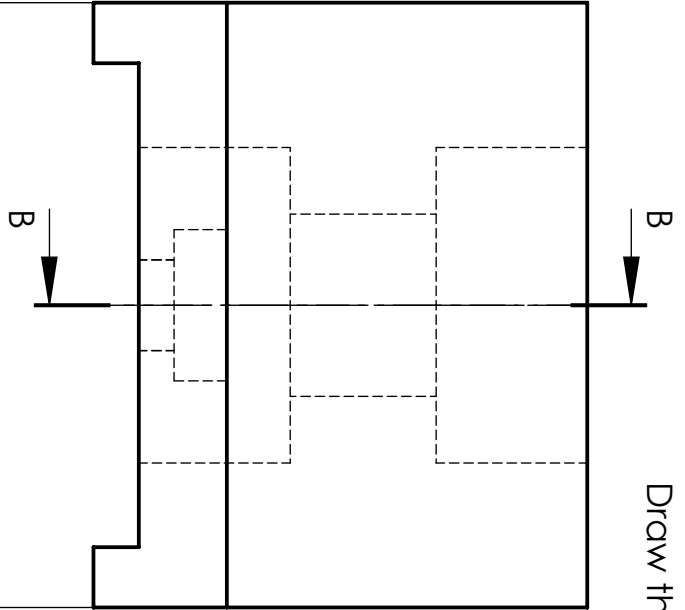
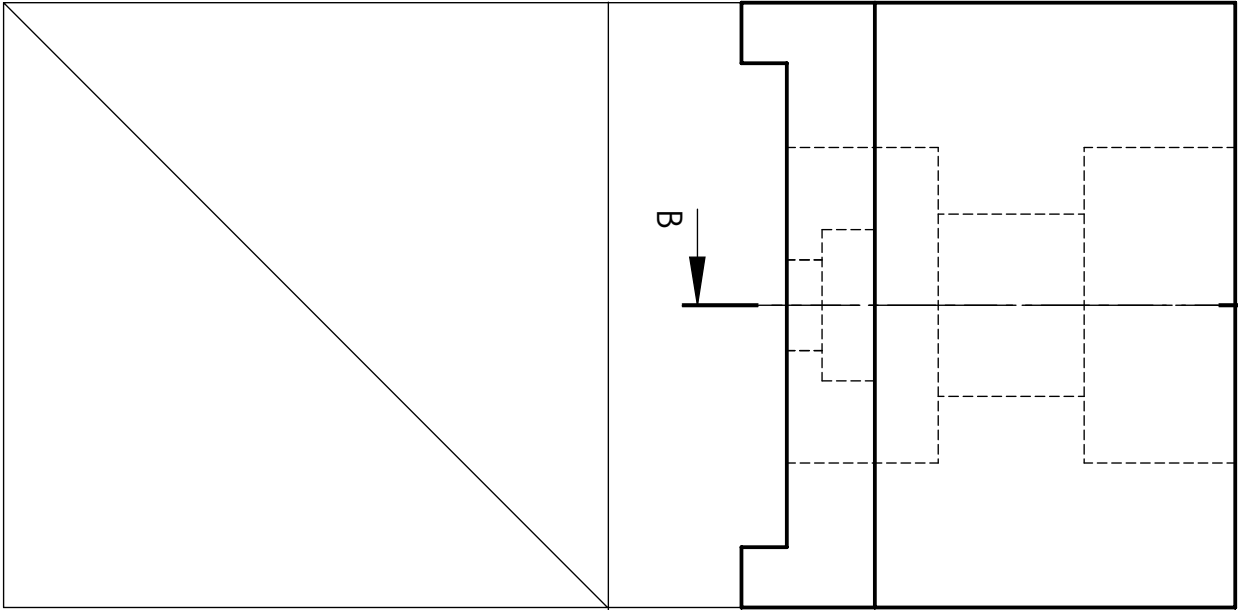


Preparatory cycle
Gr:

ESSA . TLEMCEN
SECTION N° 3

Scale	1:1
Name	
first name	

Draw the front view in B-B section.

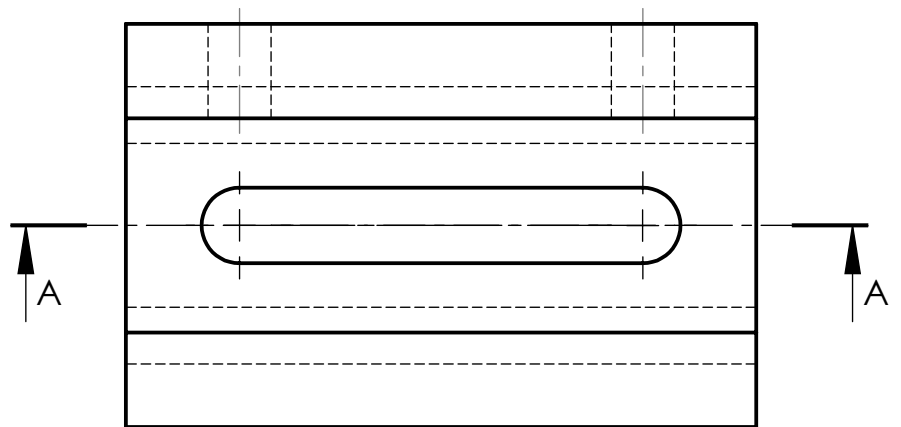
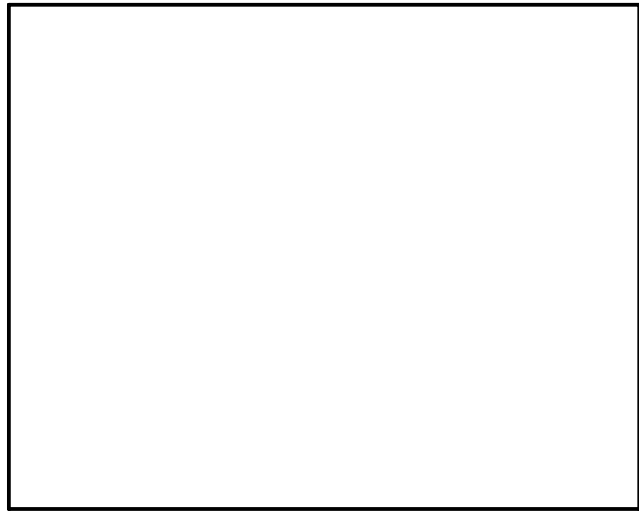
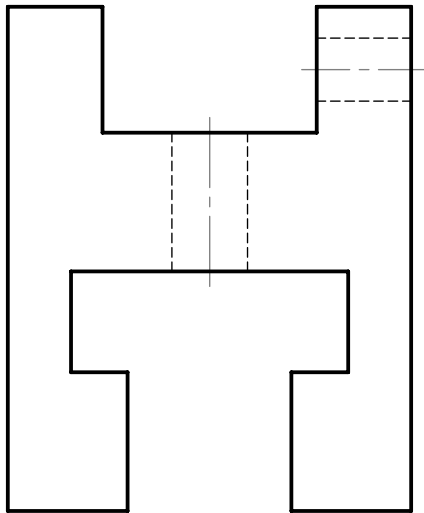


Preparatory cycle
Gr:

<p>ESSA.TLEMCEN</p> <p>SECTION N° 4</p>
--

Scale 1/1
Name
first name

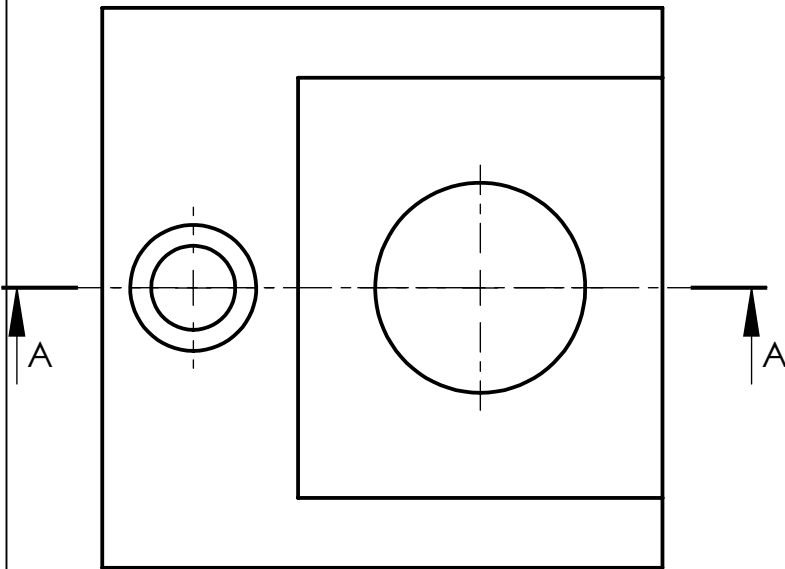
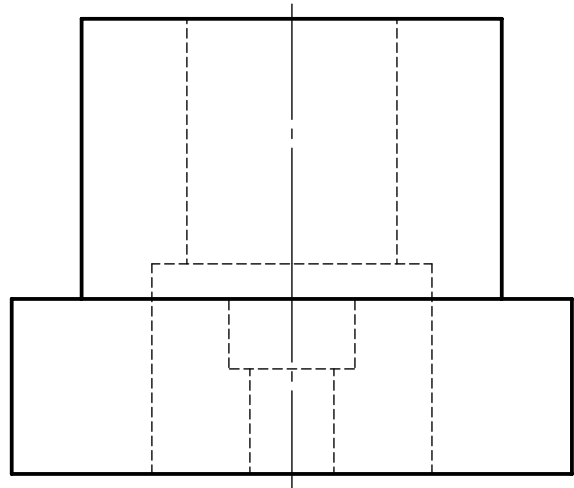
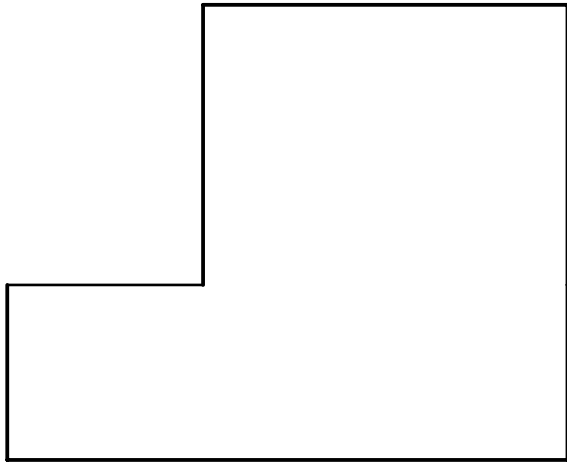
Draw the section front view A-A.



	<p>ESSA . TLEMCEN</p>	<p>Scale : 1/1</p>
<p>Préparatory cycle</p>	<p>SECTION N° 5</p>	<p>Name:</p>
<p>Gr</p>		<p>Ferst name:</p>



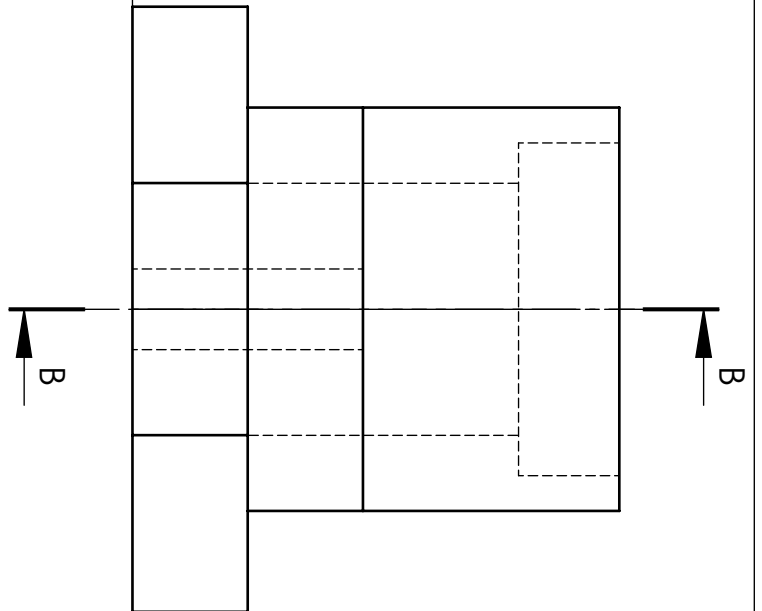
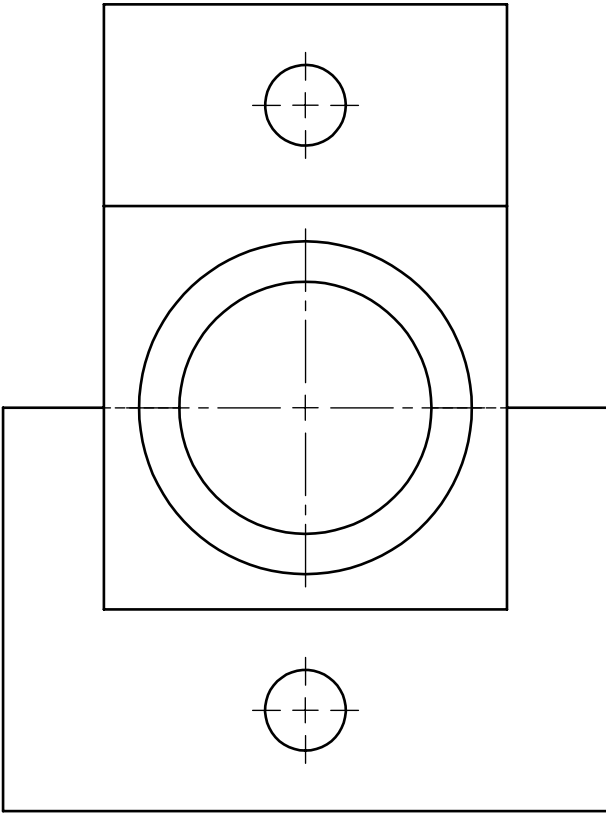
Draw the front view in section A-A of the part below.



	<p>ESSA . TLEMEN</p>	<p>Scale : 1:1</p>
<p>Préparatory cycle</p>	<p>SECTION N° 6</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>



Draw the front view in section B-B.

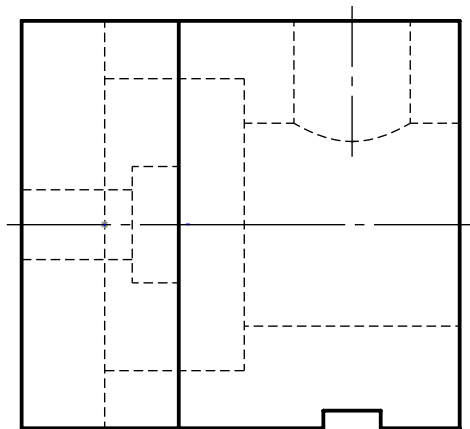
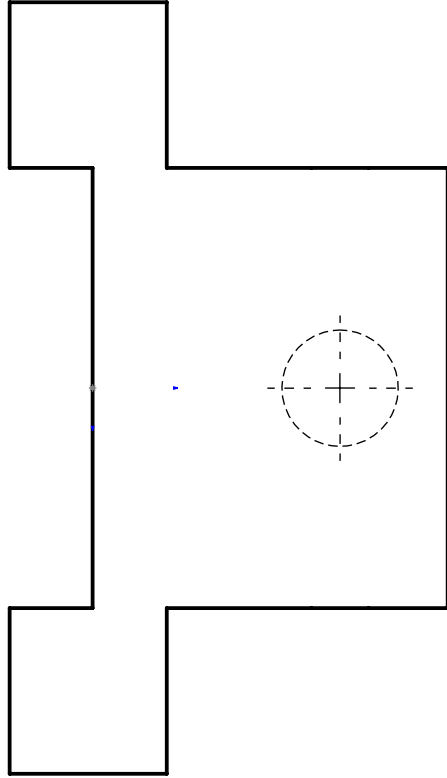
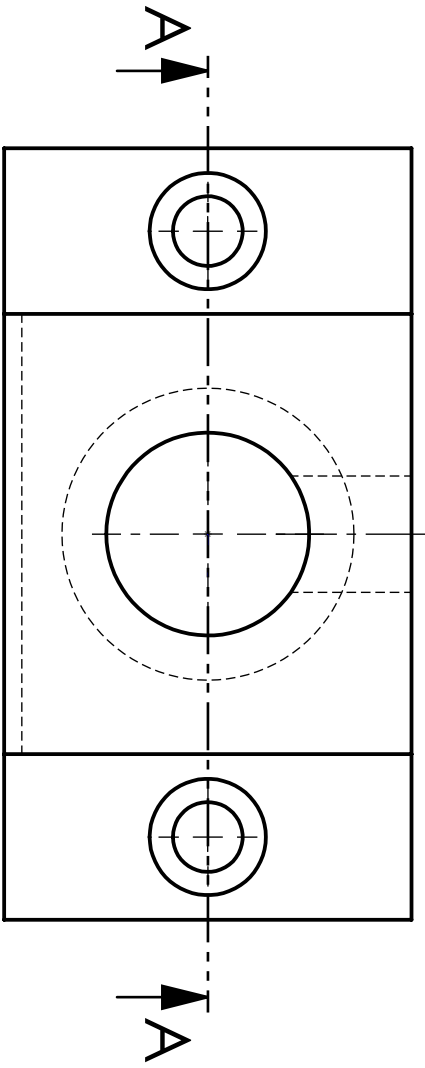


Preparatory cycle
Gr:

ESSA . TLEMCEN
SECTION N° 7

Scale 1/1
Name
first name

Exercise N°2: Draw the front sectional view along A-A.

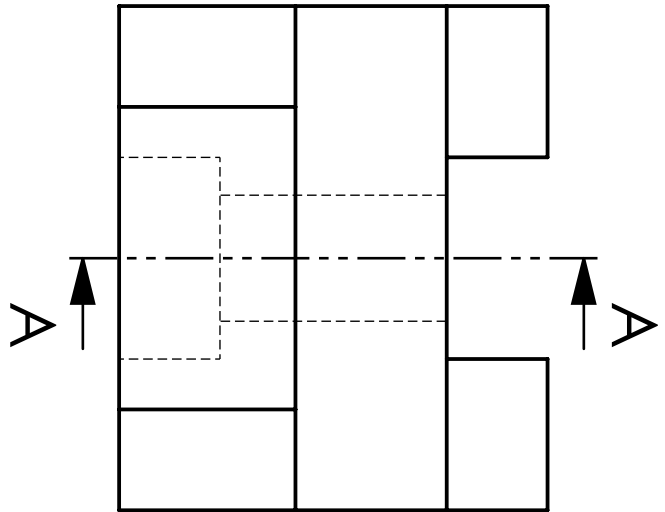
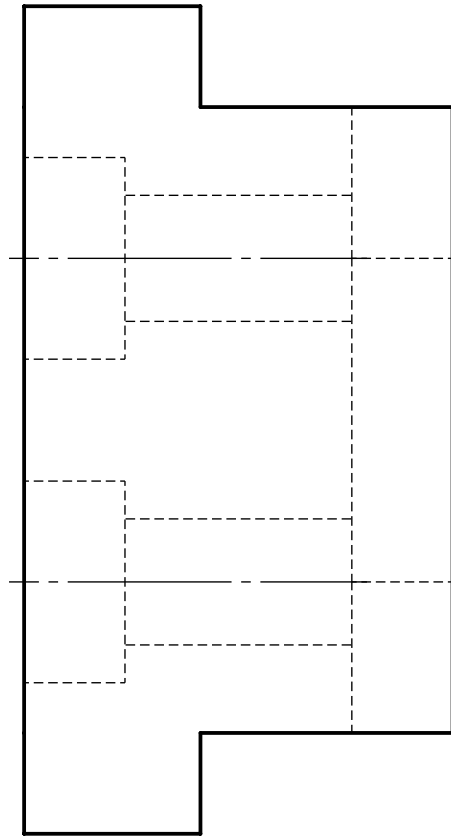
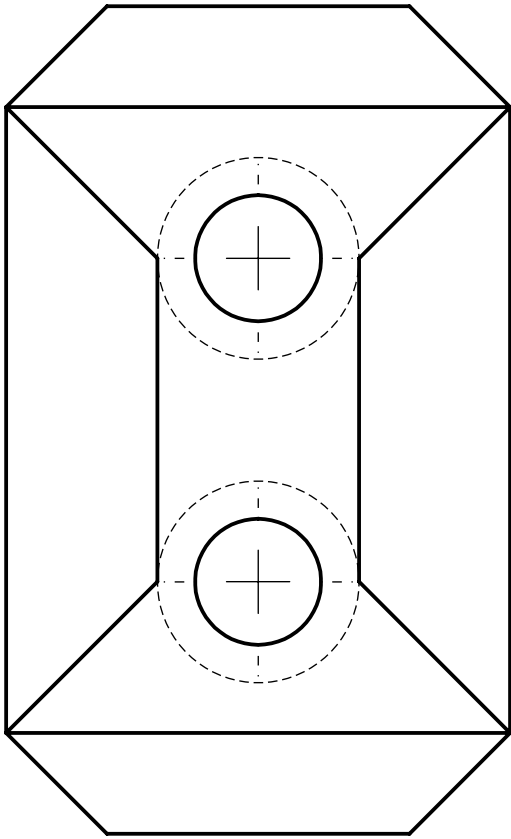


Preparatory cycle
Gr:

ESSA.TLEMCEN
SECTION N° 8

Scale 1/1
Name
first name

Exercise N°2: Draw the front sectional view along A-A.



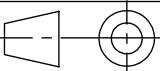
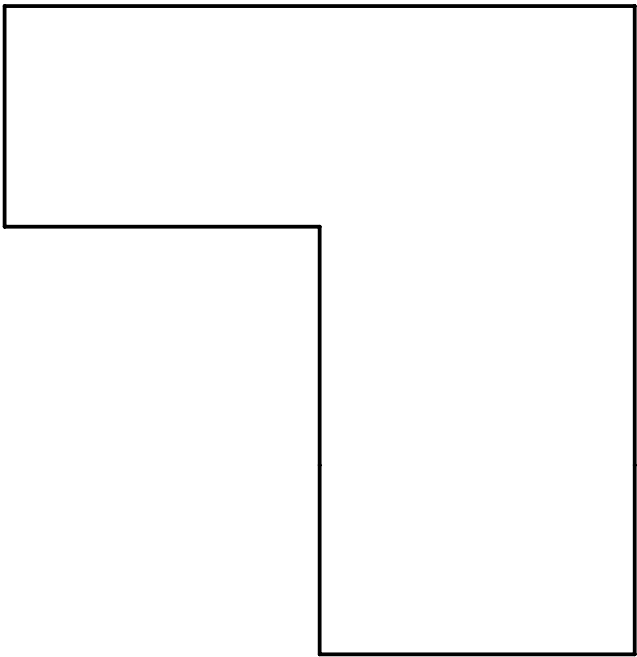
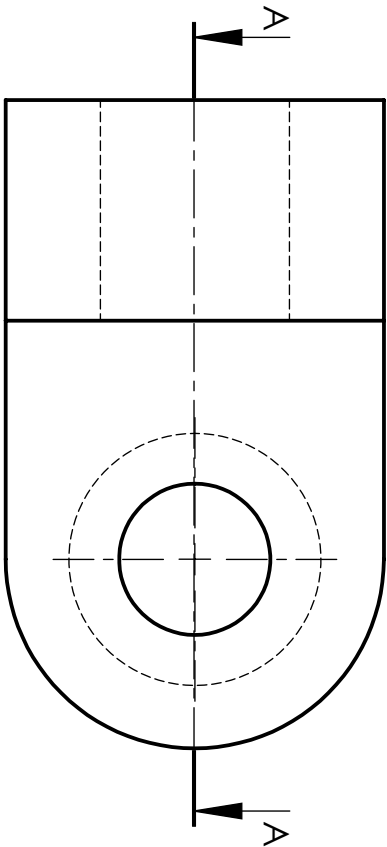
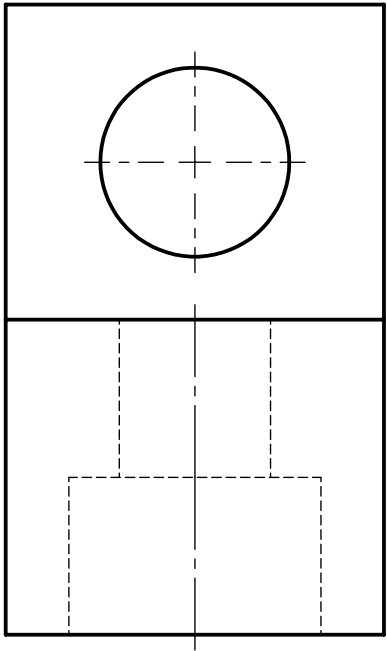
Preparatory cycle
Gr:

ESSA.TLEMCEN

SECTION N° 9

Scale 1/1
Name
first name

Draw the top view in section A-A.



Preparatory cycle

Gr:

ESSA.TLEMCEN

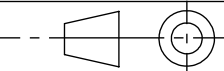
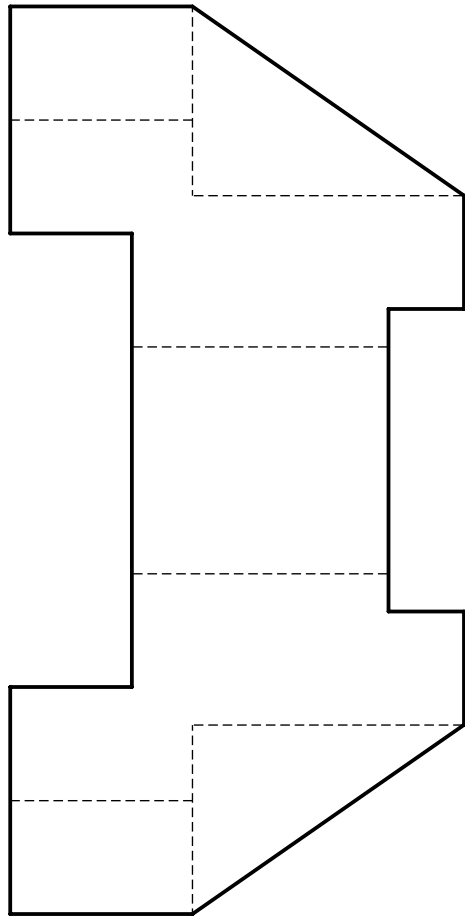
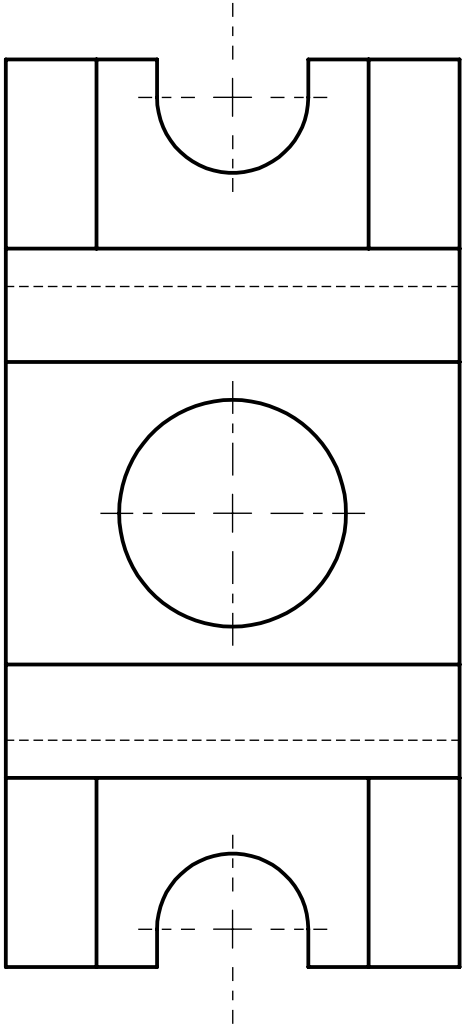
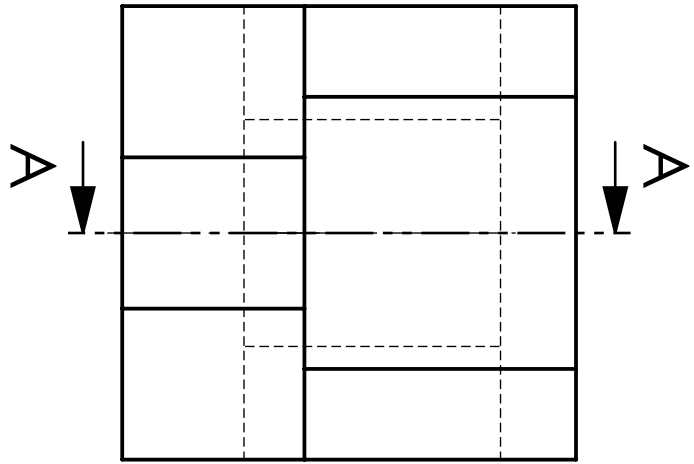
SECTION N° 10

Scale 1/1

Name

first name

Exercise N°2: Draw the front sectional view along A-A.



Preparatory cycle

Gr:

ESSA.TLEMCEN

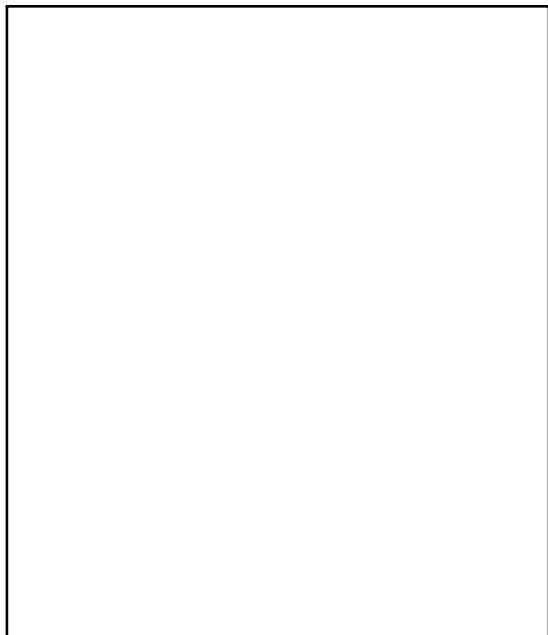
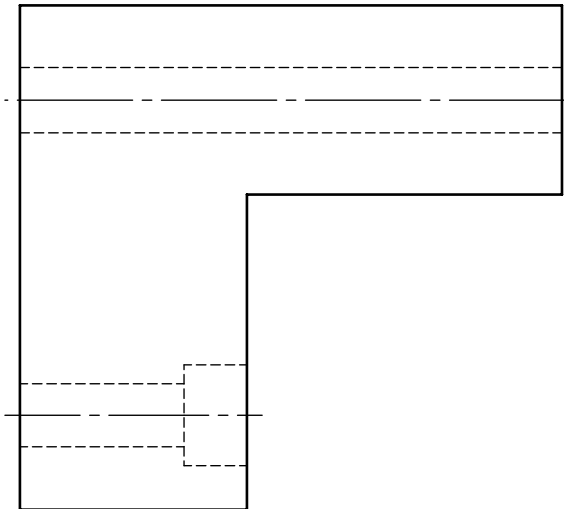
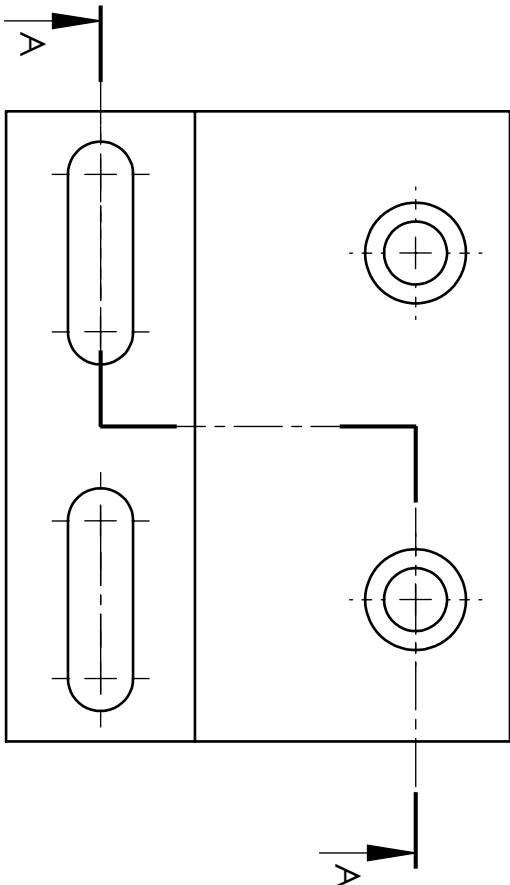
SECTION N° 11

Scale 1/1

Name

first name

Draw the front view in broken section A-A

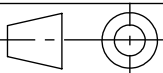
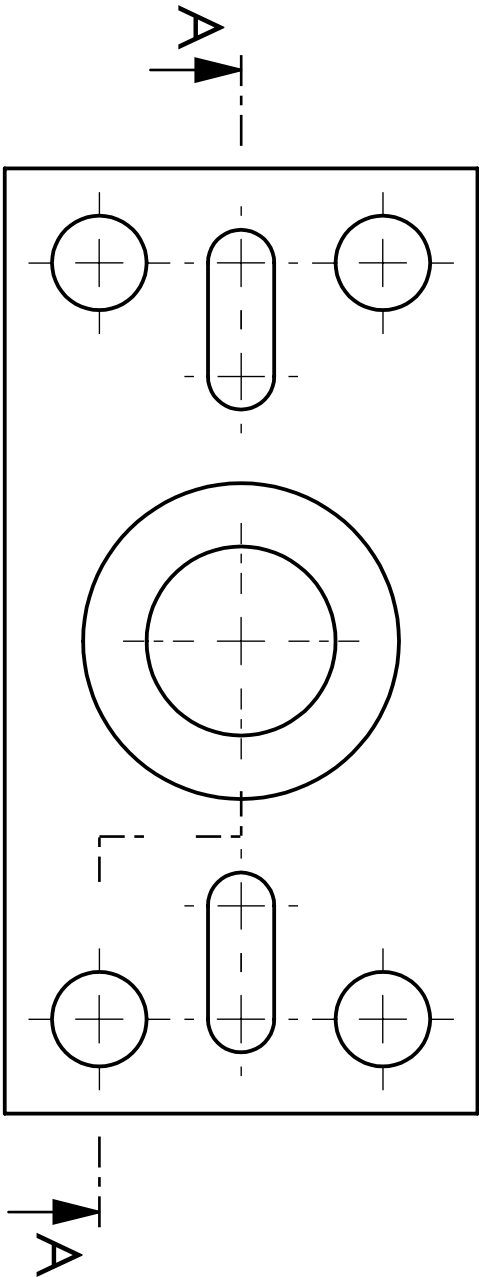
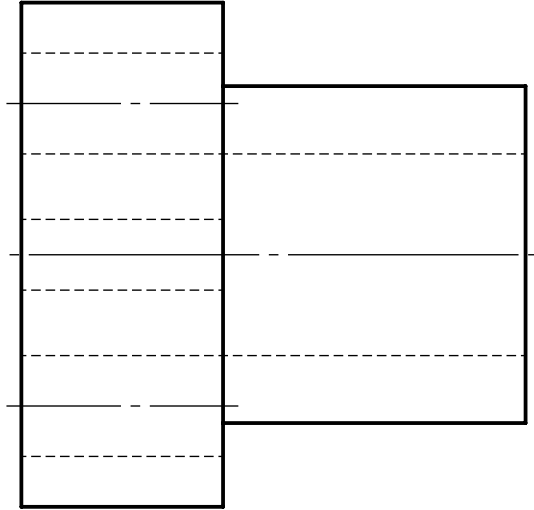


Preparatory cycle
Gr:

ESSA . TLEMCEN
SECTION N° 12

Scale 1/1
Name
first name

Draw the front view in section A-A.



ESSA.TLEMCEN

Scale 1/1

Preparatory cycle

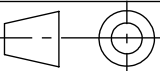
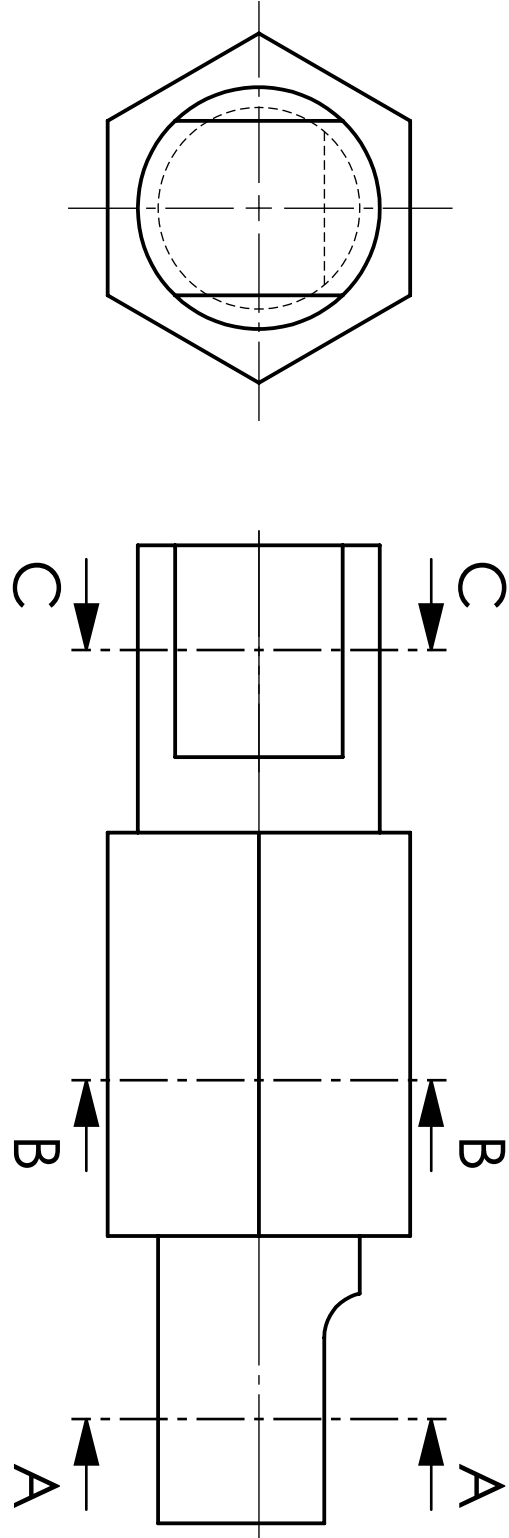
SECTION N° 13

Name

Gr:

first name

Draw the sections of the following part.



Preparatory cycle

Gr:

ESSA.TLEMCEN

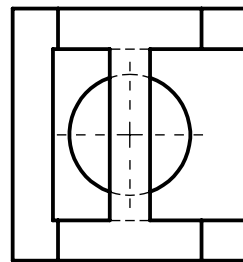
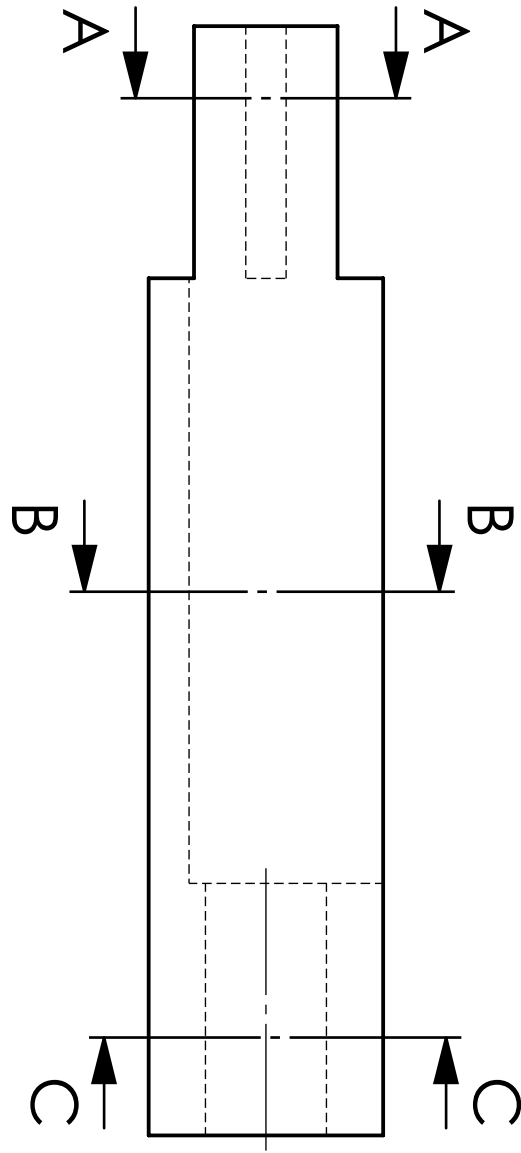
SECTION N° 14

Scale

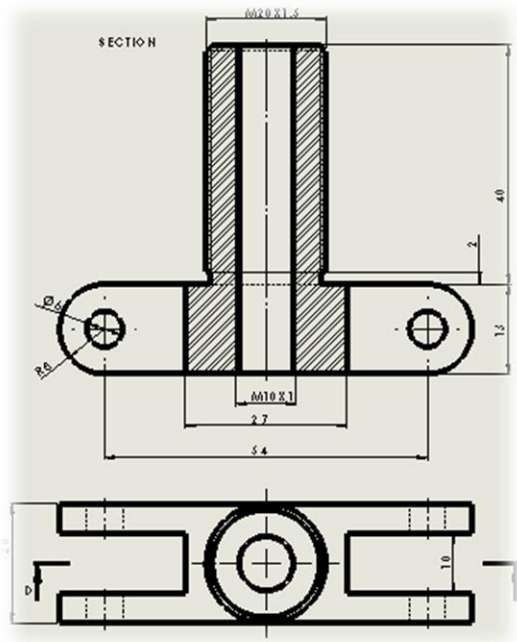
Name

first name

Draw the sections of the following part.

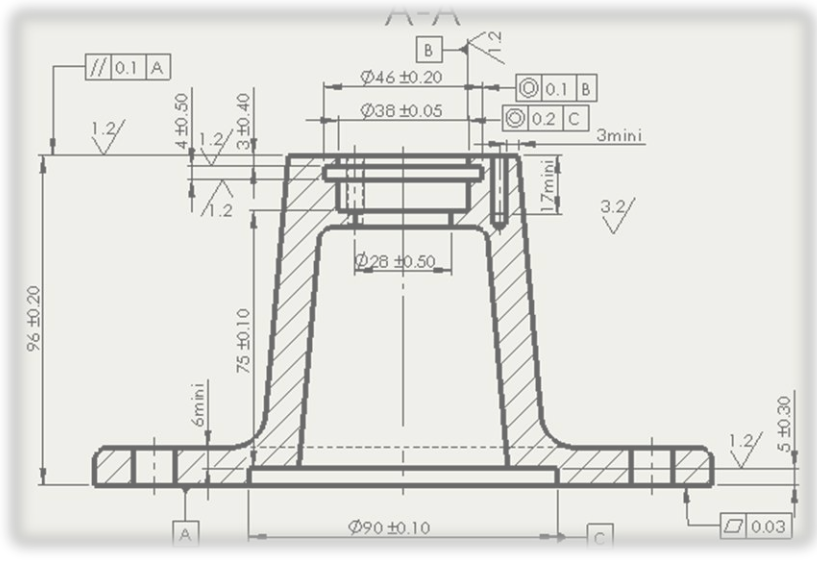


	<p>ESSA.TLEMCEN</p>	<p>Scale 1/1</p>
<p>Preparatory cycle</p>	<p>SECTION N° 15</p>	<p>Name</p>
<p>Gr:</p>		<p>first name</p>



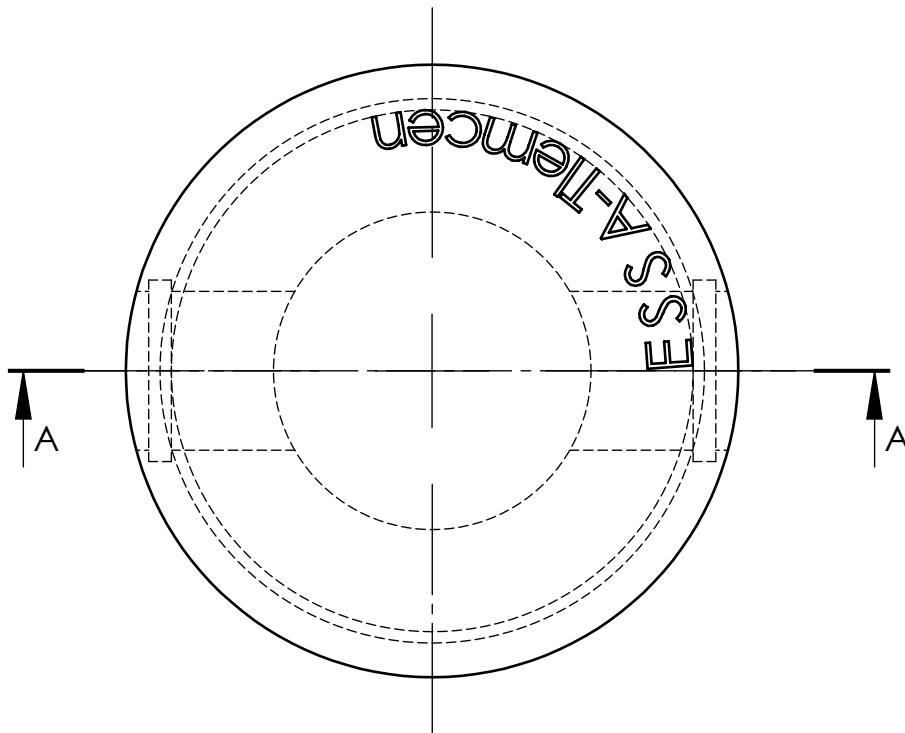
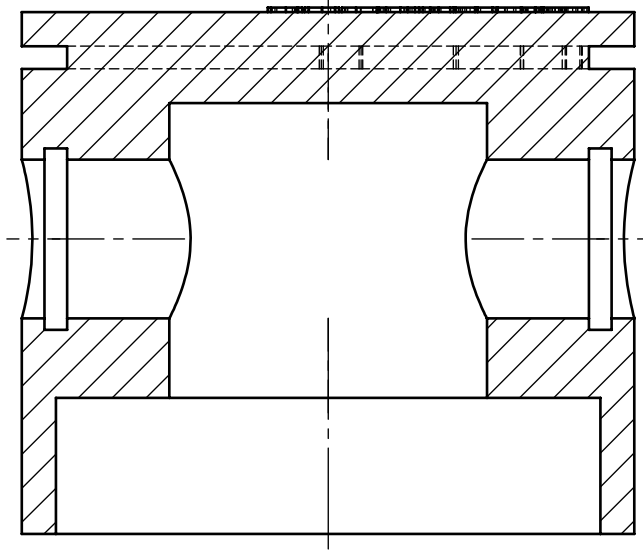
DIMENSIONS

The goal of this series of exercises is to apply functional dimensioning to a technical drawing, while correctly following the standard dimensioning practices for various geometric features.



Drawing dimensions if below.

A-A

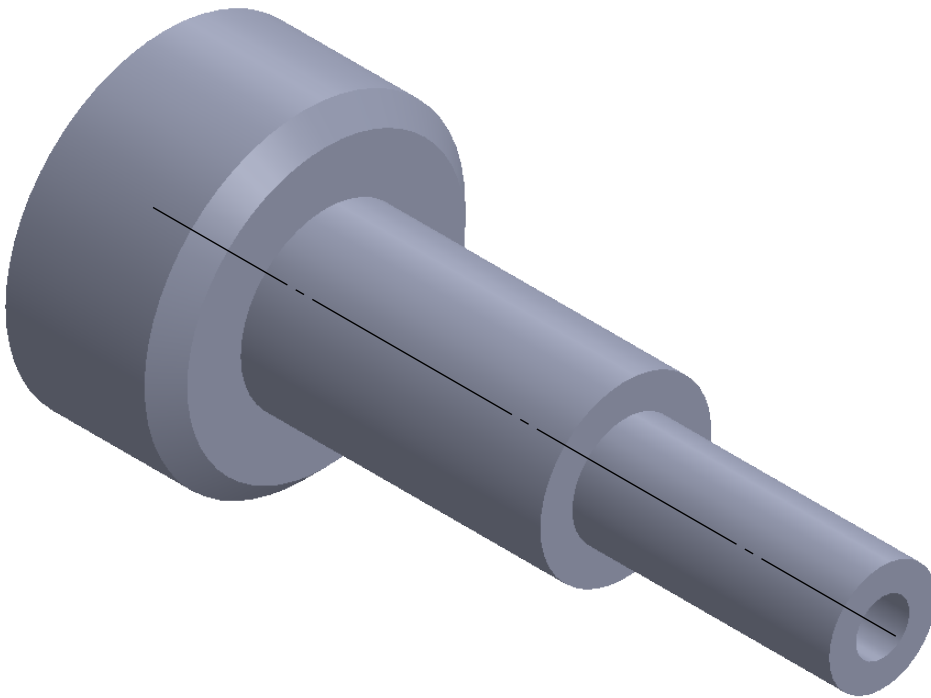
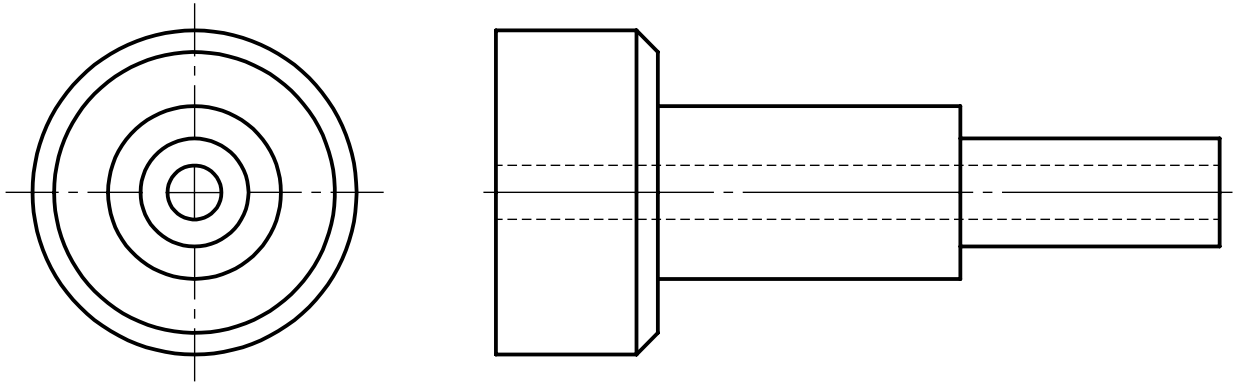


	<p>ESSA.TLEMCEM</p>	<p>Scale : 3/1</p>
<p>Préparatory cycle</p>	<p>DIMENSIONING OF THE PART</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>

N° 1



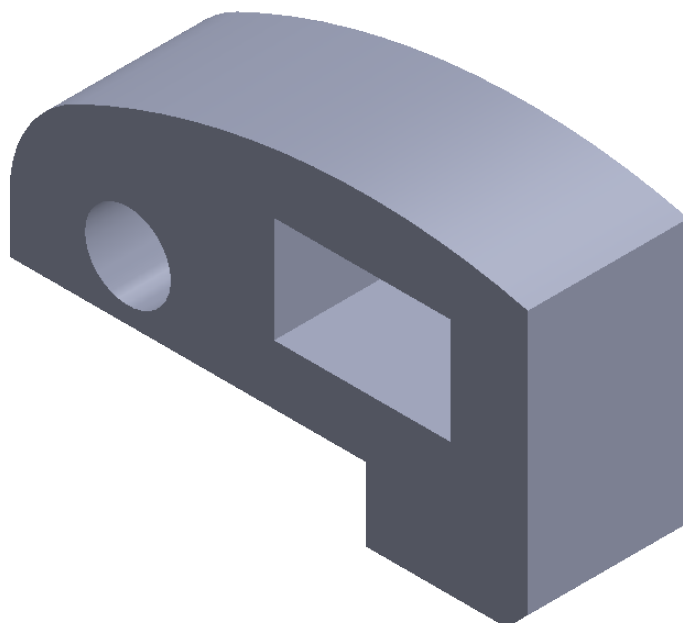
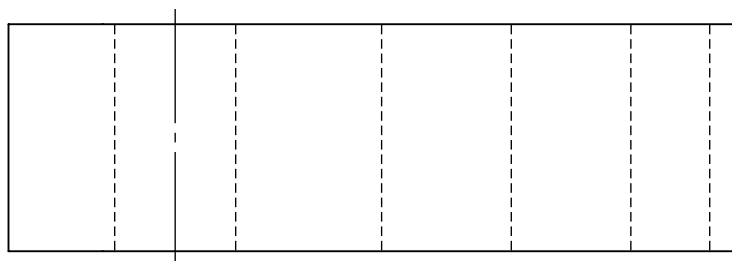
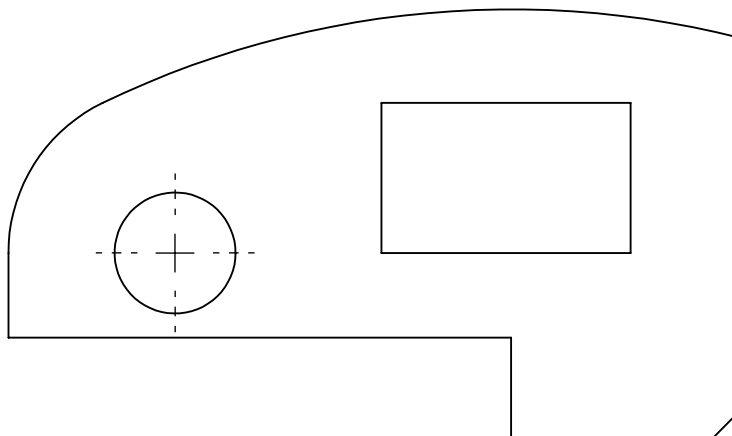
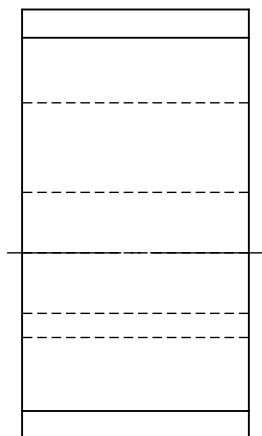
Apply the dimensioning to the following views.



	ESSA.TLEMCEN	Scale : 1/1
Préparatory cycle	DIMENSIONING OF THE PART N° 2	Name:
Gr:		FirstName:



Apply the dimensioning to the following views.



Préparatory cycle
Gr:

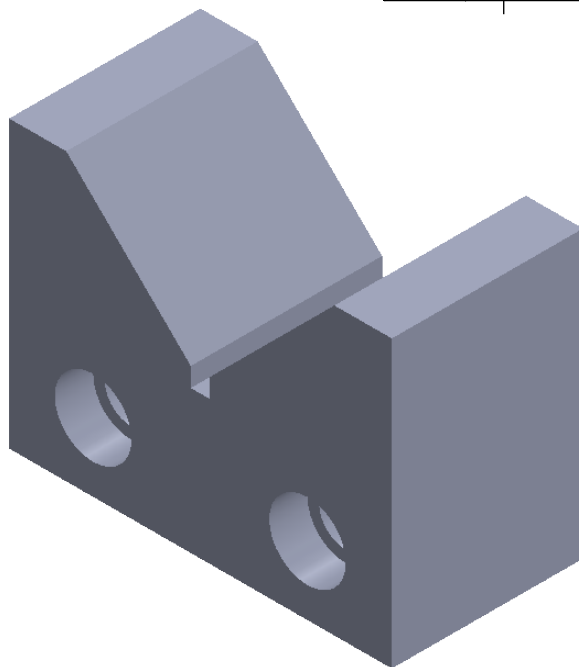
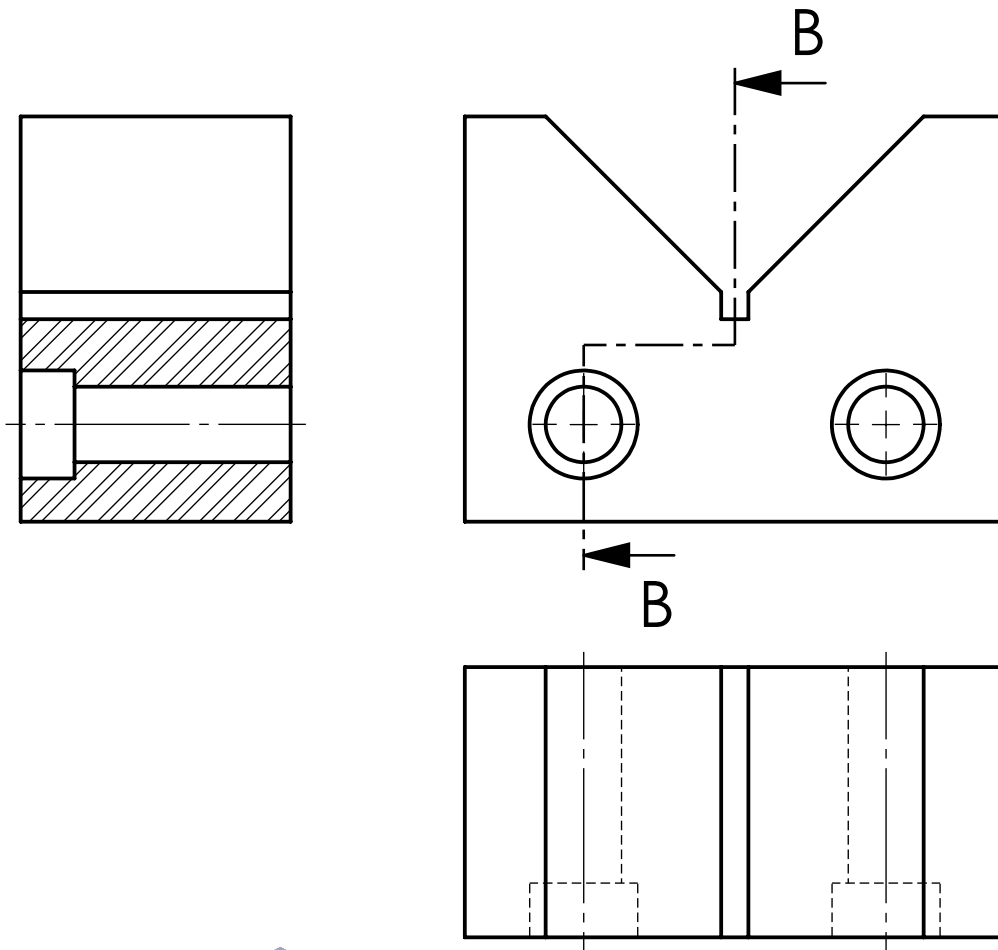
ESSA.TLEMCEN
DIMENSIONING OF
THE PART N° 3

Scale : 1/1
Name:
FirstName:



Apply the dimensioning to the following views.

SECTION B-B



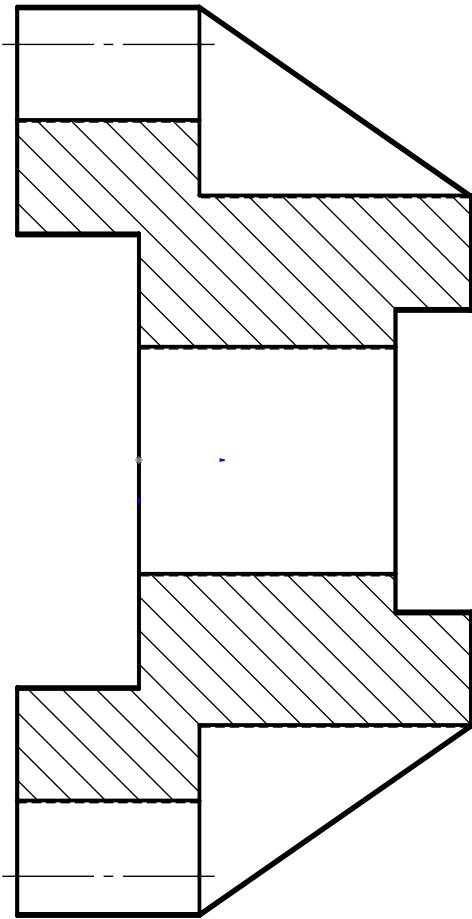
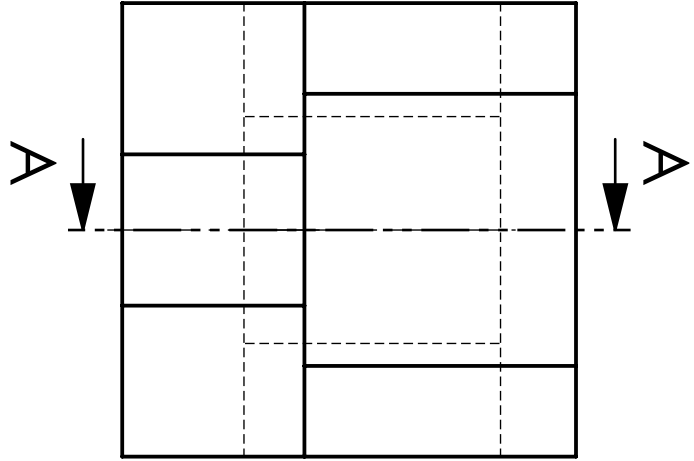
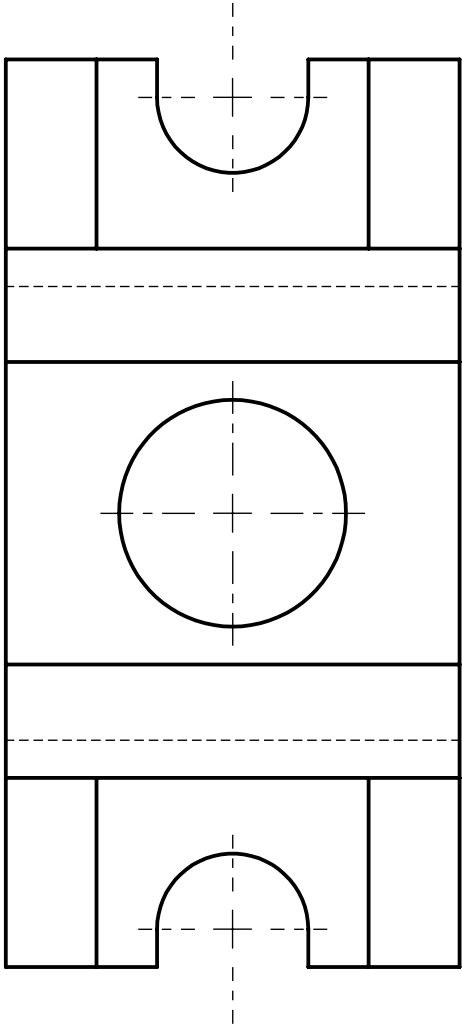
Préparatory cycle
Gr:

ESSA.TLEMCEN
DIMENSIONING OF
THE PART N° 4

Scale : 1/2
Name:
FirstName:



Apply the dimensioning to the following views.

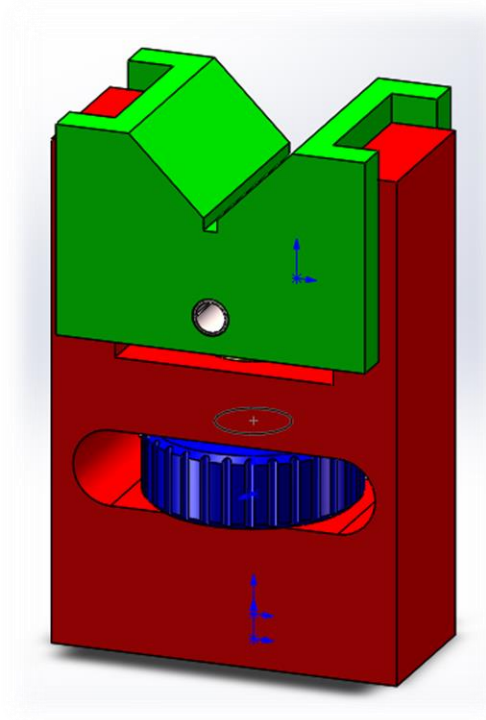


A-A

Preparatory cycle
Gr:

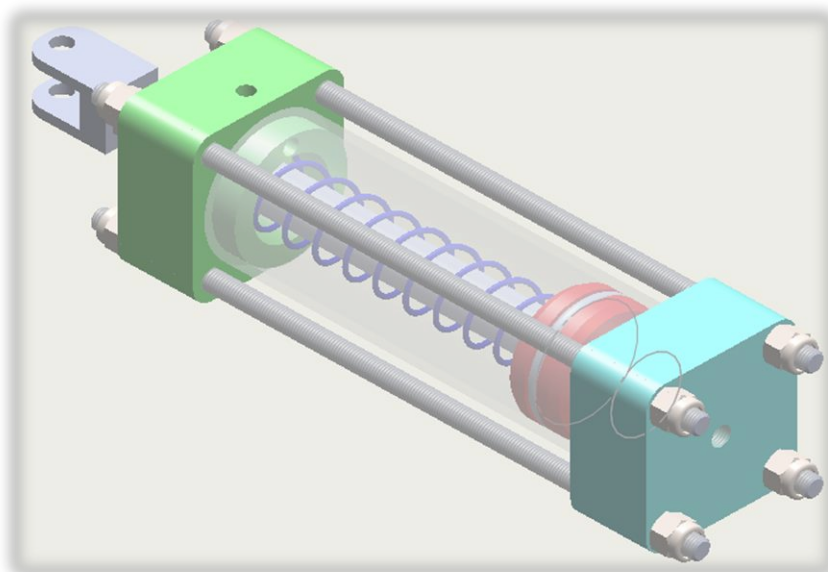
ESSA.TLEMCEN
DIMENSIONING OF
THE PART N° 5

Scale 1/1
Name
first name



ASSEMBLY DRAWING

This series of exercises aims to develop skills in 3D part modeling, device assembly creation, and the generation of both detail and assembly drawings, by utilizing the three main environments of **SolidWorks**.



ADJUSTABLE VEE

The function of the assembly drawing.




The assembly drawing shown illustrates a hydraulic clamp designed to hold a workpiece securely in position during machining operations. The clamping force is generated by pressurized oil acting on piston 2. The clamp is mounted on the machine-tool table to ensure stable and precise positioning.

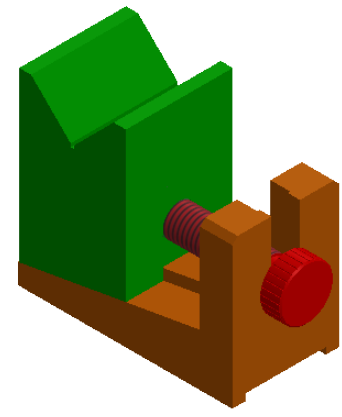
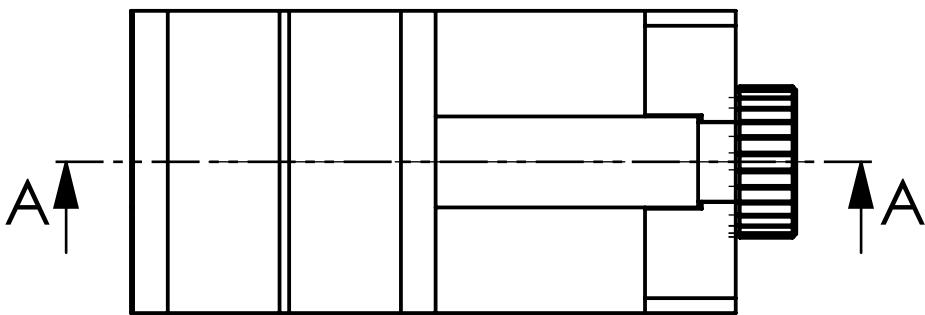
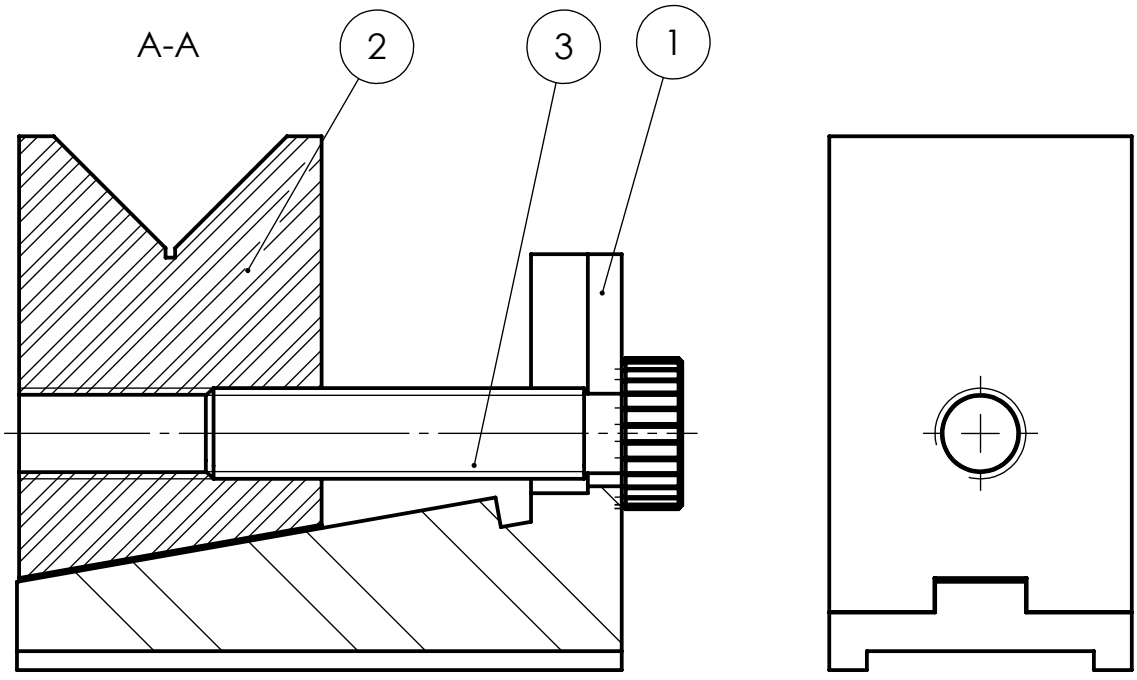
Work to be done.

1. Study of the Assembly Drawing

- a) At what scale is the assembly drawing made?
- b) What is the number of parts that make up the clamping device?
- c) Name the moving and fixed parts.
- d) Give the numbers of the standard parts.

2. Design in SolidWorks

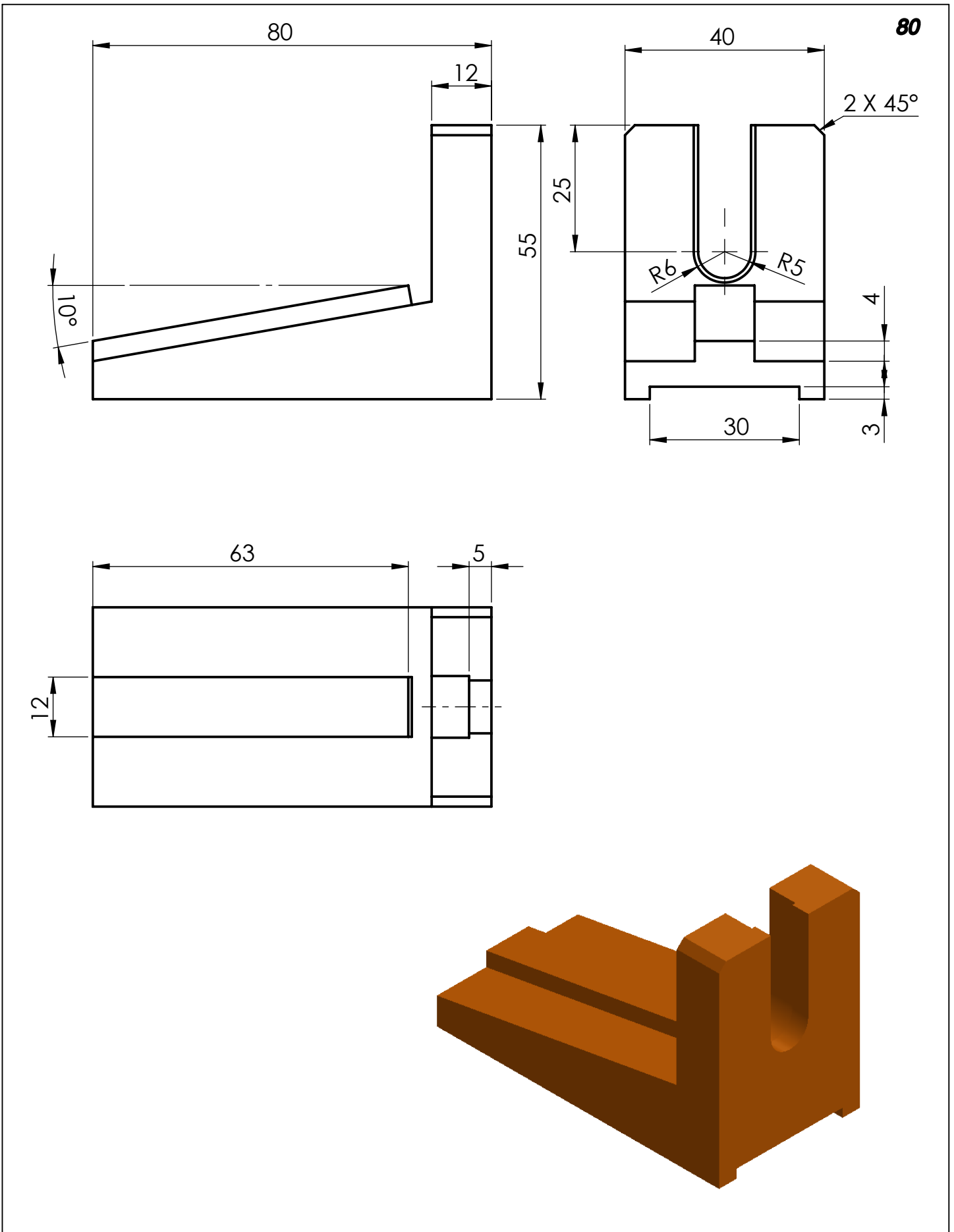
- a) Model the parts that make up the clamping device and save them in a folder. 
- b) Assemble the device; for the standard parts, import them from the SolidWorks virtual library. 
- c) Create the detailed drawings of the parts (*part definition drawings*). 
- d) Create the drawing of the complete assembly (*assembly drawing*). 



No. ARTICLE	NUMERO DE PIECE	DESCRIPTION	QTE
1	vee support		1
2	Vee		1
3	Operating screw		1

	ESSA.TLEMCEN	Scale: 1/1
Preparatory cycle	ADJUSTABLE VEE	Name:
Sg: Gr:		First name :

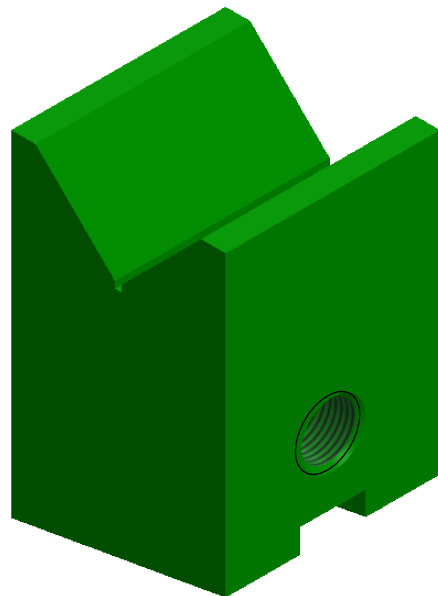
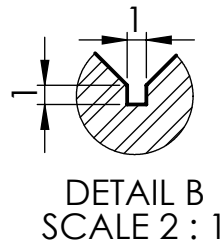
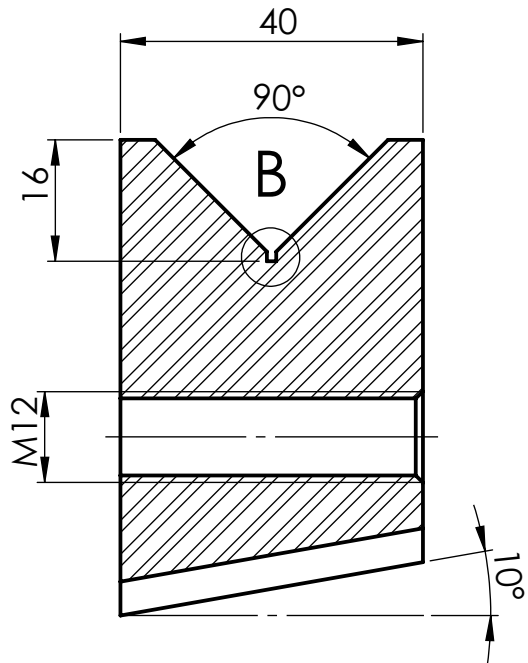
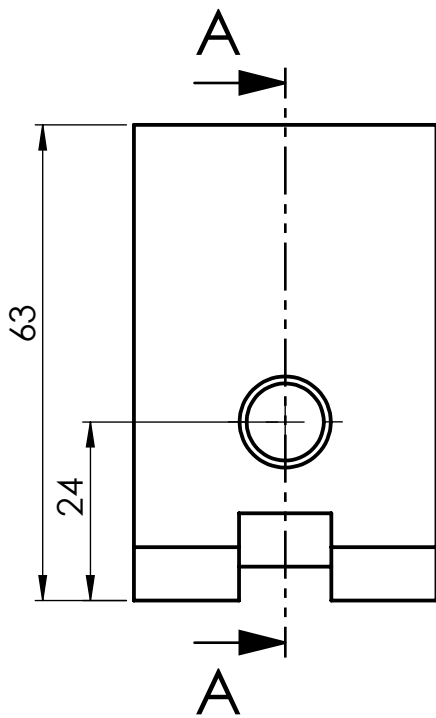




	<p>ESSA.TLEMCEN</p>	<p>Scale : 1/1</p>
<p>Préparatory cycle</p>	<p>Vee support</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>



SECTION A-A
SCALE 1 : 1



Préparatory cycle
Gr:

ESSA.TLEMCEN

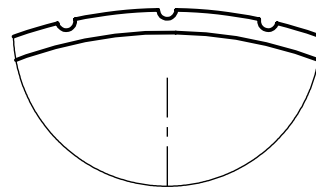
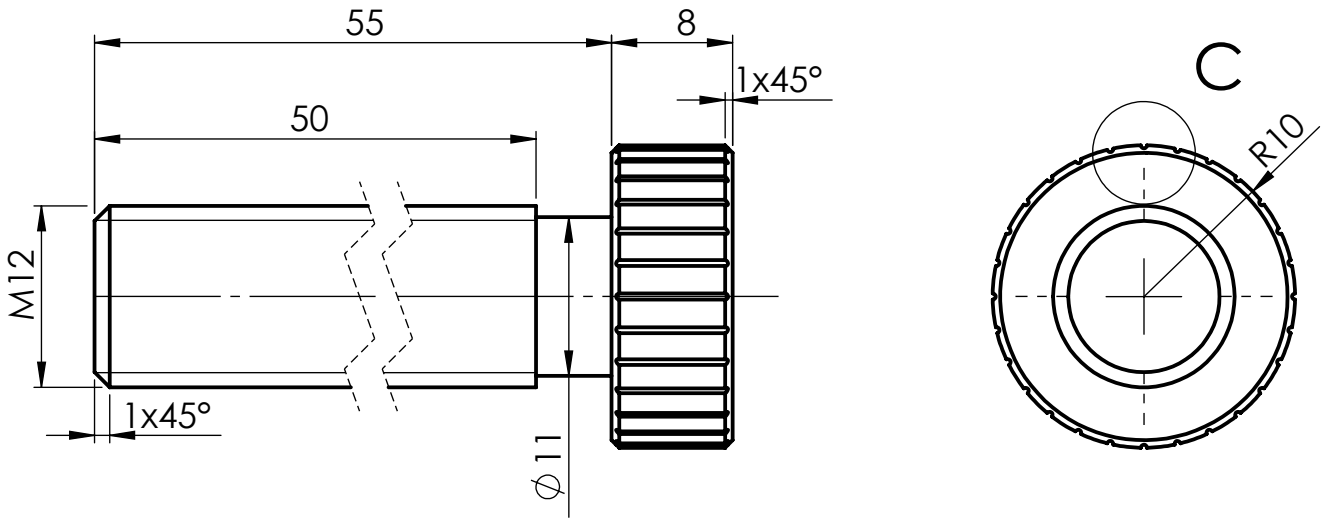
Scale : 1/1

Vee

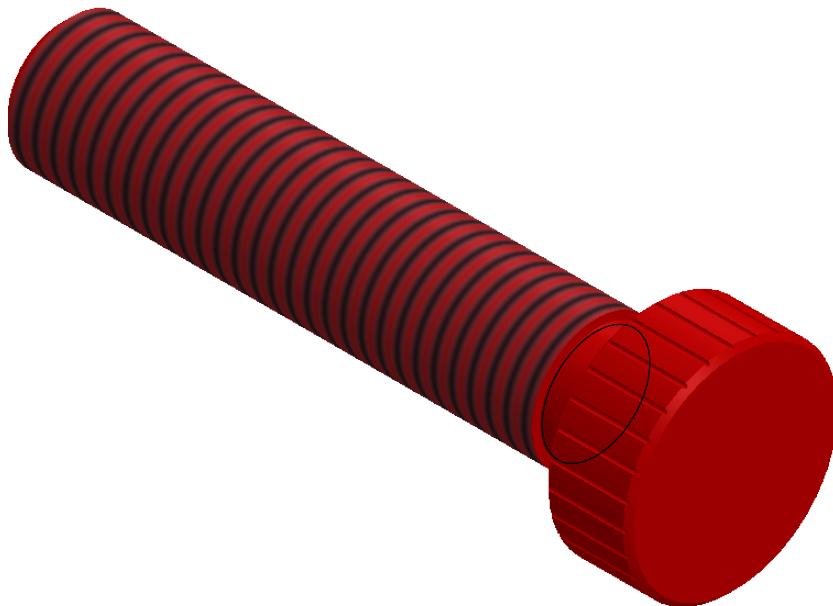
Name:

FirstName:





DETAIL C
SCALE 6 : 1



	<p>ESSA.TLEMCEN</p>	<p>Scale : 1/1</p>
<p>Préparatory cycle</p>	<p>Operating screw</p>	<p>Name:</p>
<p>Gr:</p>		<p>FirstName:</p>

DOOR ROLLER SLIDING

The function of the assembly drawing.





A pulley for a sliding door is a mechanical device that facilitates the smooth and quiet movement of the door along its track. The pulley (or roller) is attached either to the top or the bottom of the door and rolls along a horizontal track (usually made of metal or aluminum) fixed to the wall or ceiling. When the door is pushed or pulled, the pulley rotates freely on its axis, reducing friction and allowing the door to slide easily. Some pulleys are equipped with ball bearings, which improve the smoothness of movement and reduce wear.

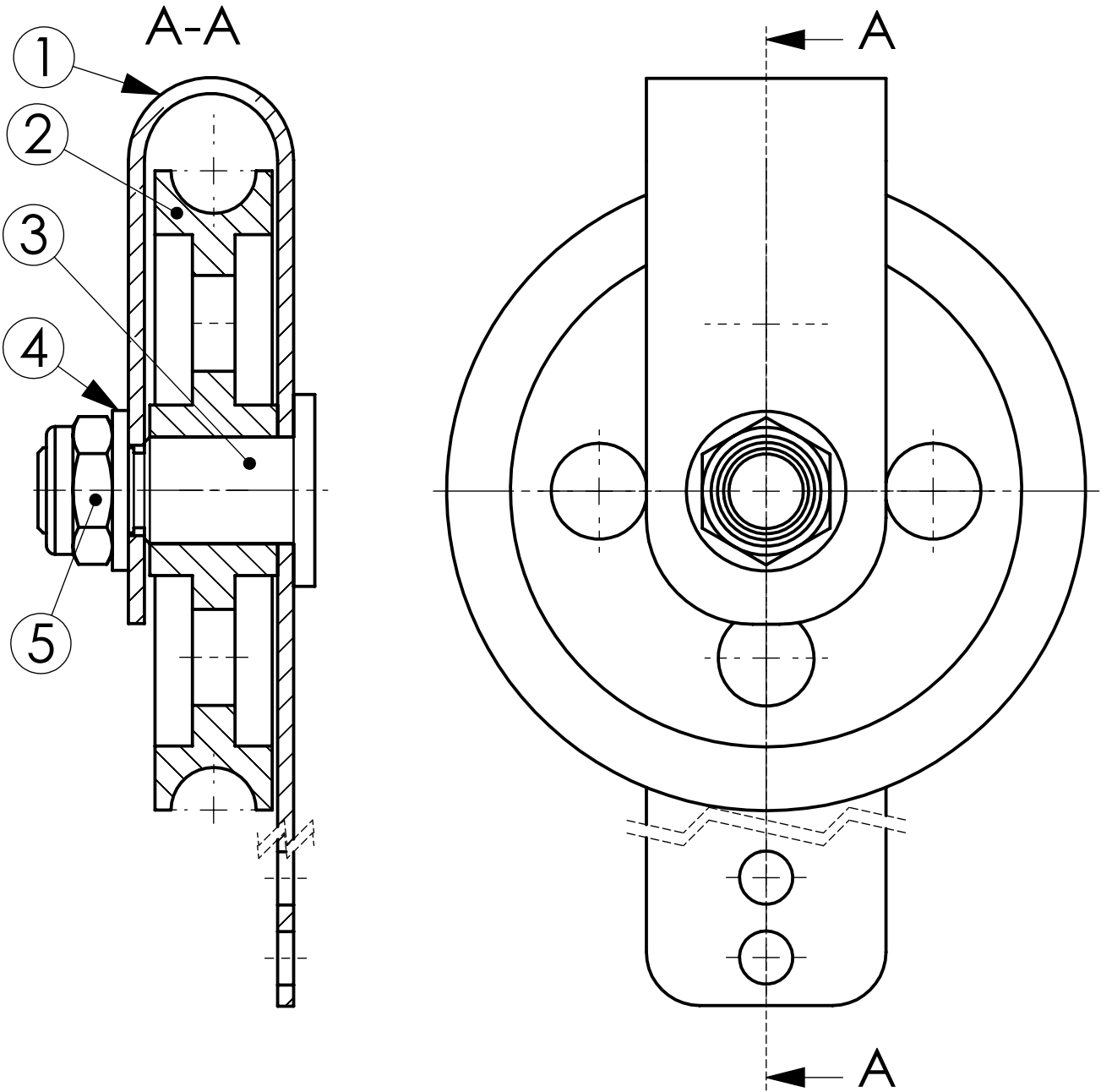
Work to be done.

1. Study of the Assembly Drawing

- a) At what scale is the assembly drawing made?
- b) What is the number of parts that make up the door roller sliding device?
- c) Name the moving and fixed parts.
- d) Give the numbers of the standard parts.

2. Design in SolidWorks

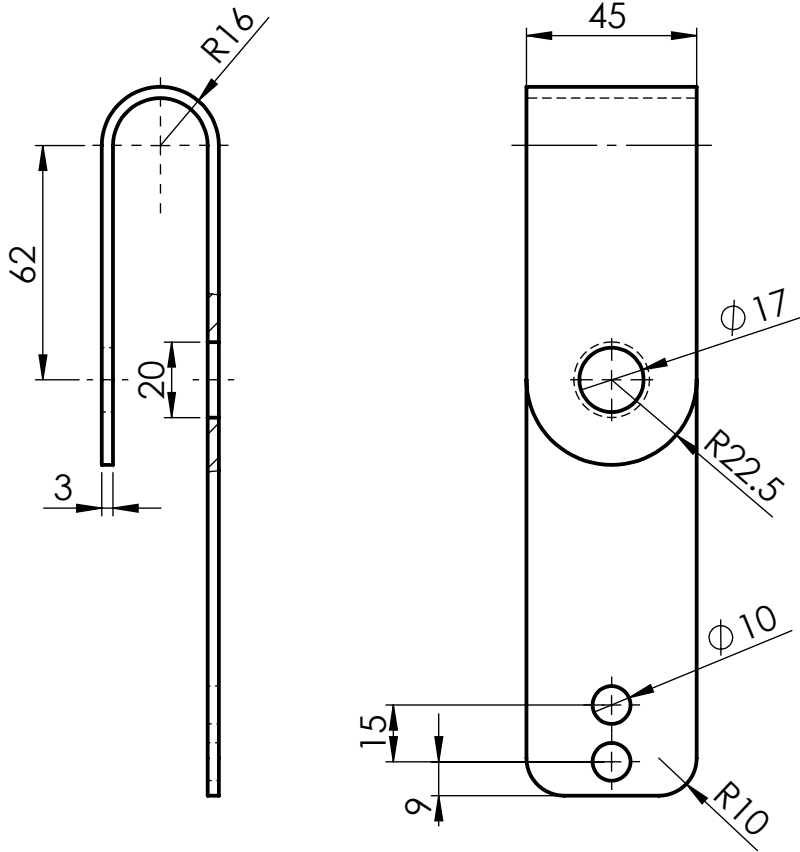
- a) Model the parts that make up the door roller sliding device and save them in a folder. 
- b) Assemble the device; for the standard parts, import them from the SolidWorks virtual library. 
- c) Create the detailed drawings of the parts (*part definition drawings*). 
- d) Create the drawing of the complete assembly (*assembly drawing*). 



5	1	Nilstop nut Hm 16		
4	1	Washer 16x3		
3	1	shaft	XC 38	
2	1	Sheave	C 20	
1	1	Screed	E 200	
Rep	Nb	Designation	Material	Observations

	ESSA . TLEMCEN	Scale : 1/1
Préparatory cycle	Door roller Sliding	Name:
Gr:		FirstName:



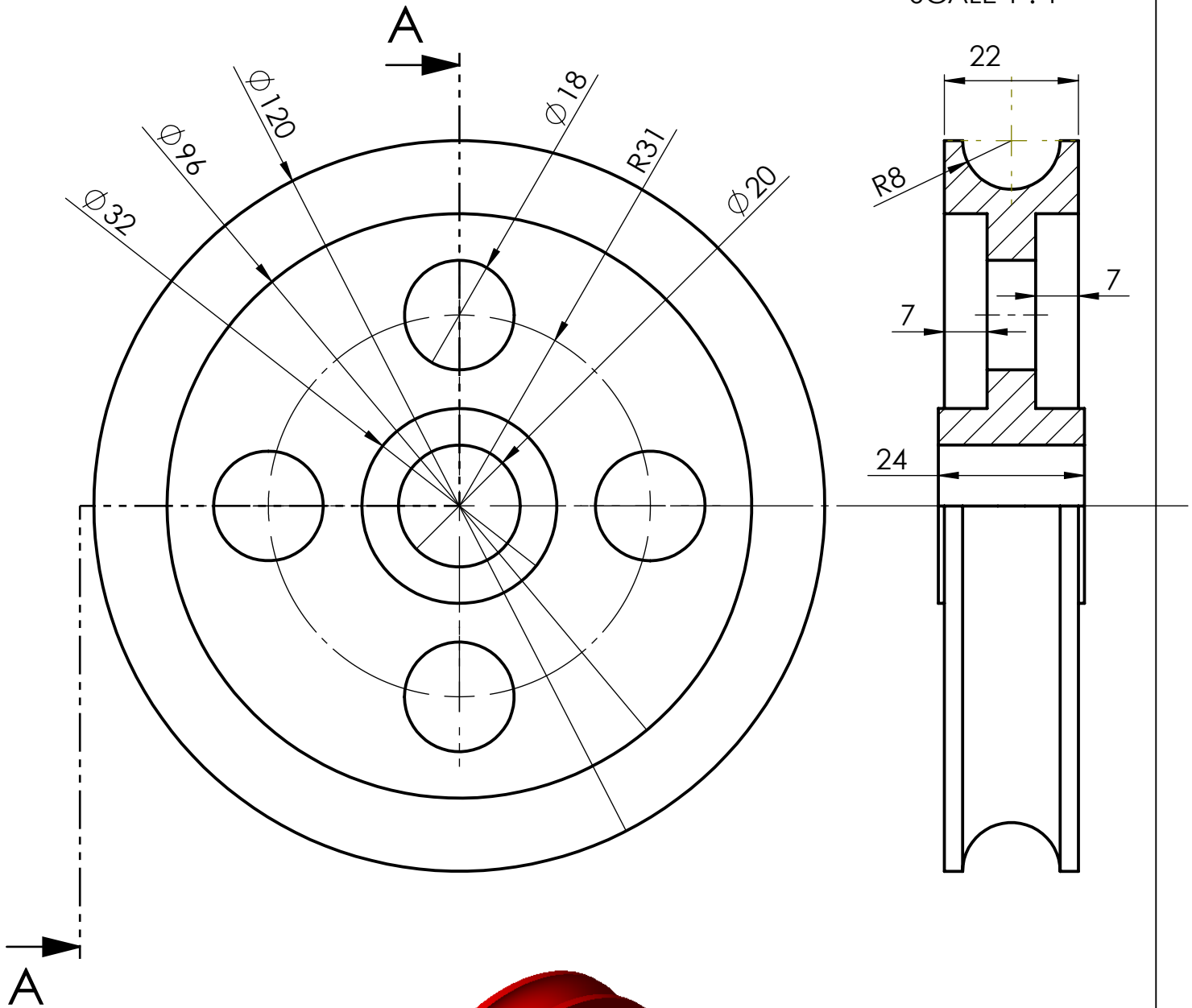


Préparatory cycle
Gr:

<h1>ESSA.TLEMCEN</h1>
<h2>Support</h2>

Scale : 1/2
Name:
FirstName:

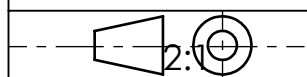
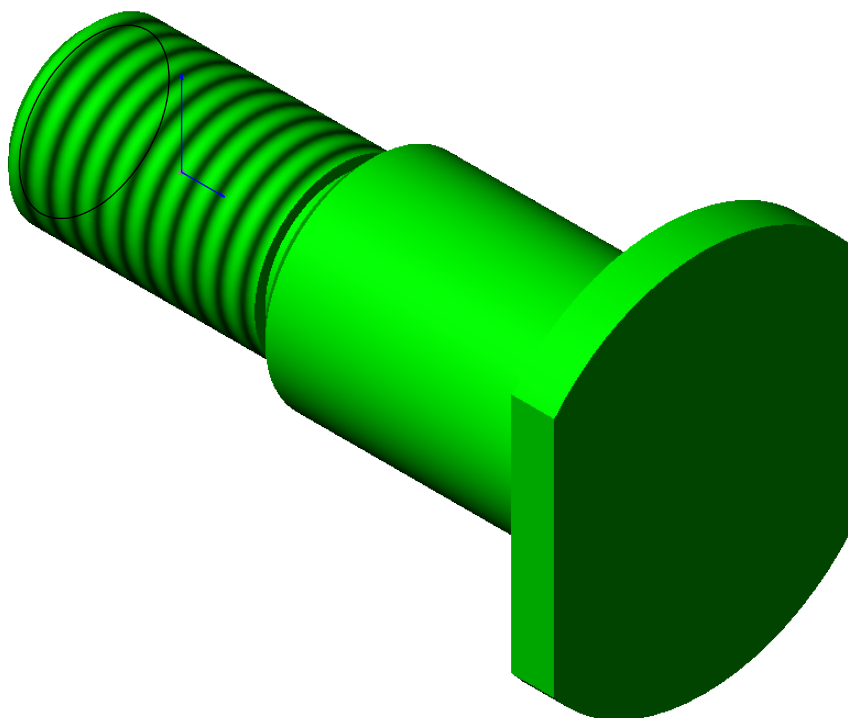
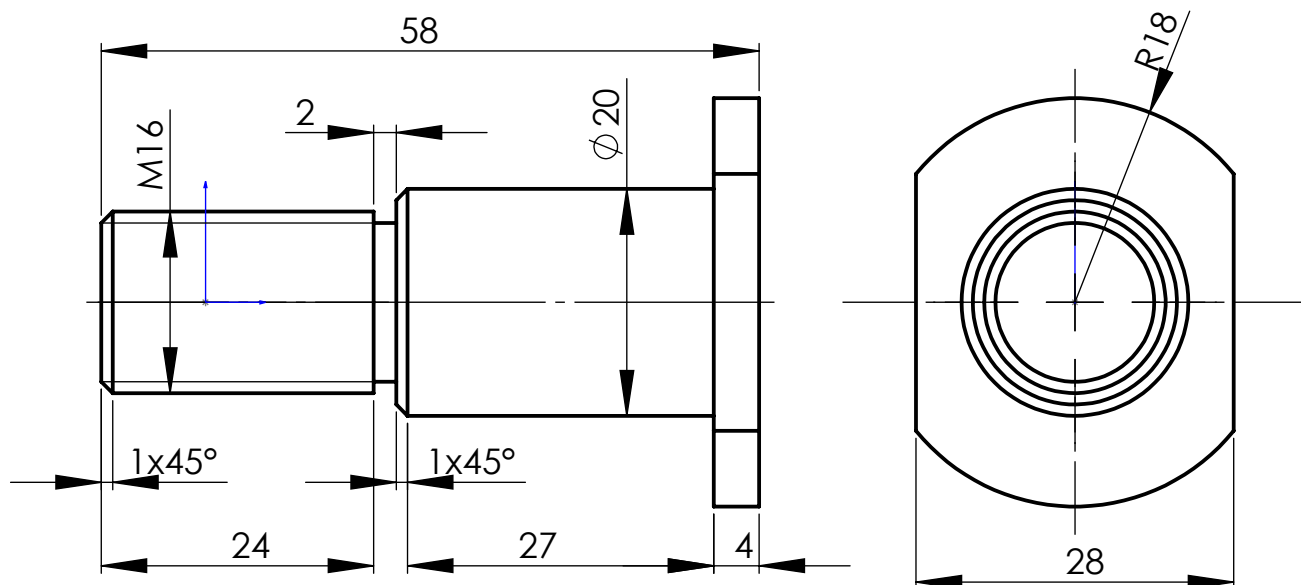




Préparatory cycle
Gr:

<p>ESSA.TLEMCEN</p> <p>Pulley</p>
--

Scale : 1/1
Name:
FirstName:



ESSA.TLEMCEN

Scale : 2/1

Préparatory cycle

Name:

Gr:

Axe

FirstName:



TARGETT

The functioning of the device.





A latch is a small manual mechanical lock that allows a door, a car door, or a cupboard to be closed and held in the closed position. The latch is fixed on the door (or on the car door), while the strike plate is fixed on the frame or on the opposite panel.

Work to be done.

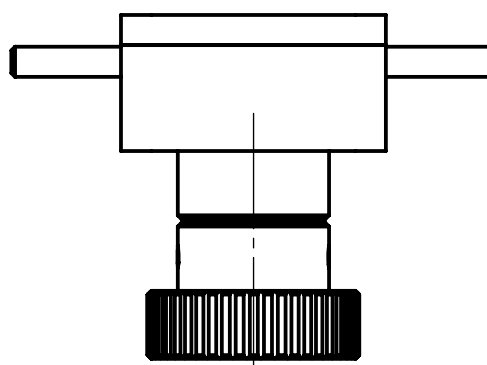
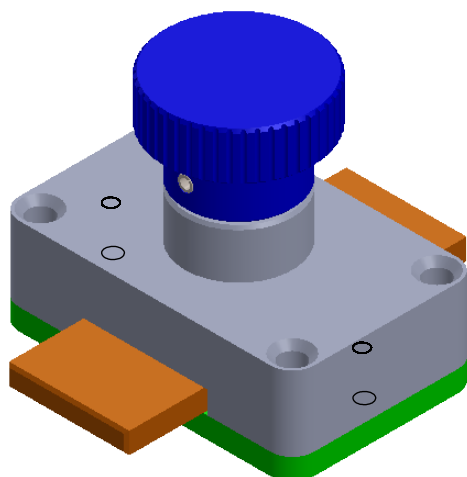
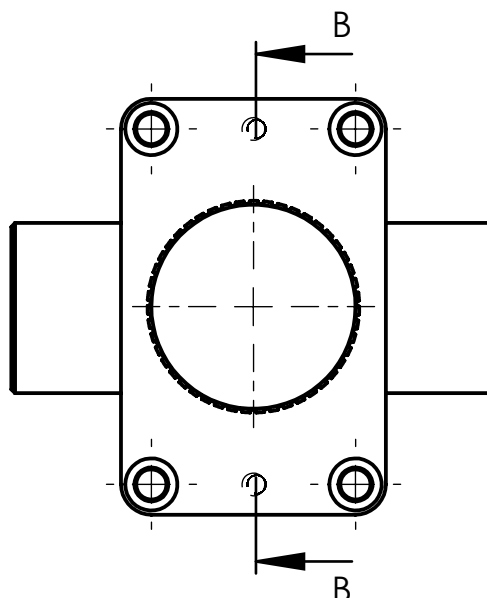
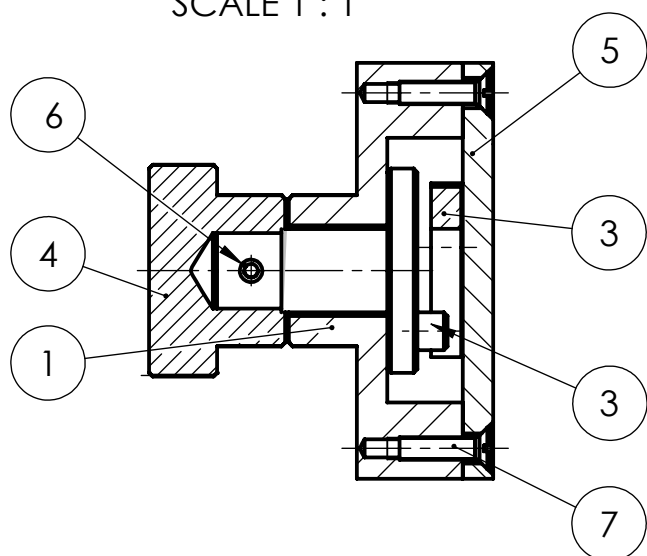
1. Study of the Assembly Drawing

- a) At what scale is the assembly drawing made.
- b) What is the number of parts that make up the Targett device.
- c) Name the moving and fixed parts.
- d) Give the numbers of the standard parts.

2. Design in SolidWorks

- a) Model the parts that make up the targett device and save them in a folder. 
- b) Assemble the device; for the standard parts, import them from the SolidWorks virtual library. 
- c) Create the detailed drawings of the parts (*part definition drawings*). 
- d) Create the drawing of the complete assembly (*assembly drawing*). 

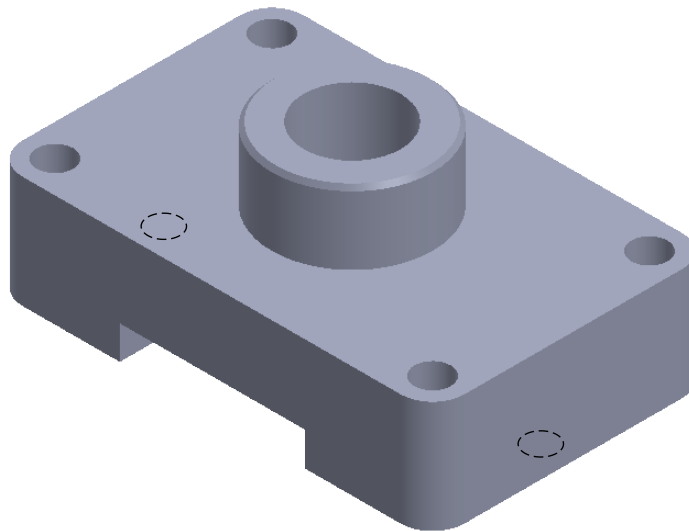
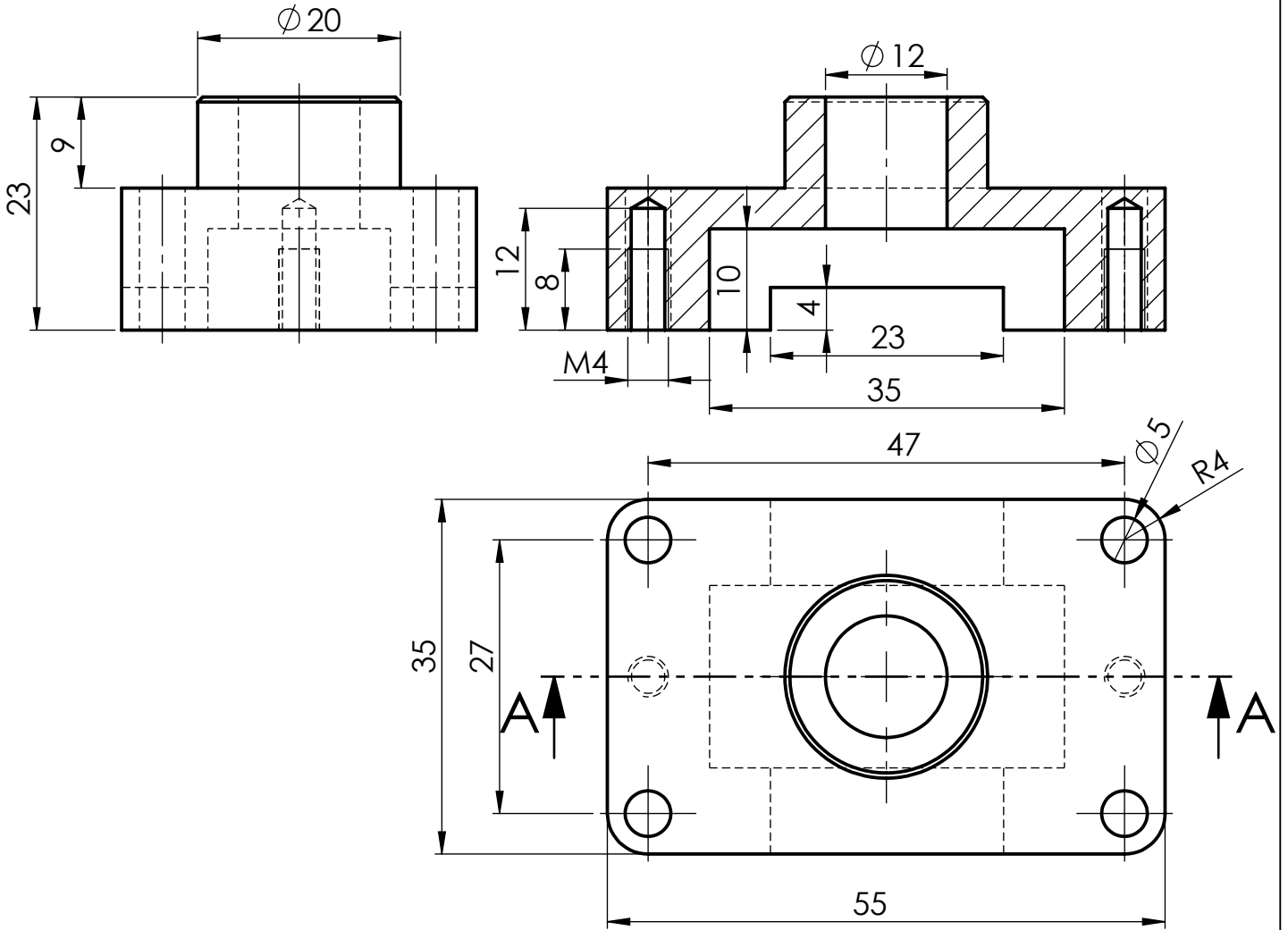
SECTION B-B
SCALE 1 : 1



ITEM NO.	DISINATION	MATERIAL	QTY.
1	body	S235	1
2	axis	C35	1
3	longuette	S235	1
4	button	EN AW-1050	1
5	plate	S235	1
6	ISO 8752 - 3 x 20 - St	C22	1
7	ISO 2009 - M3 x 12 - 12C	C22	2

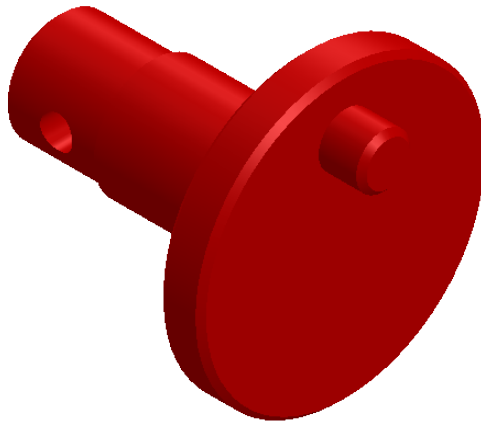
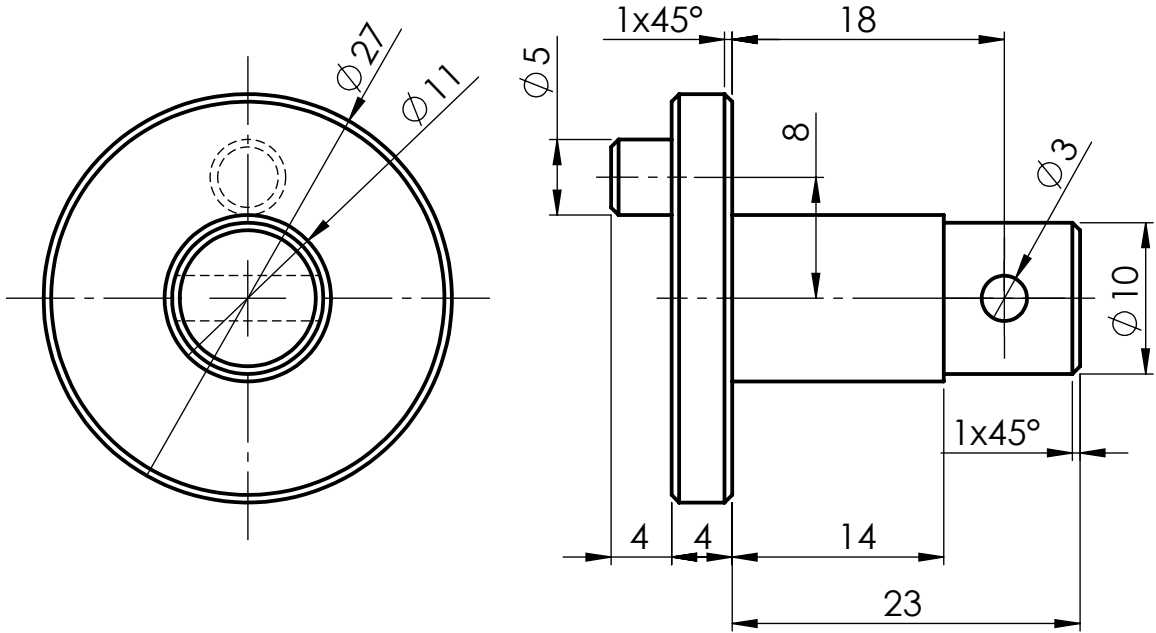
	ESSA.TLEMCEN	Scale : 1/1
Préparatory cycle	TARGETTE	Name:
Gr:		FirstName:





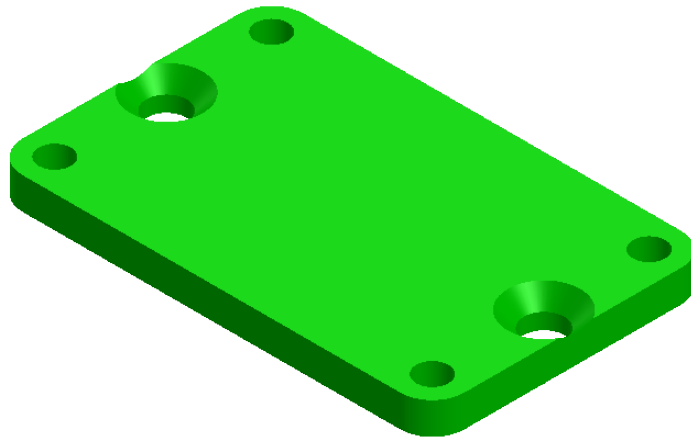
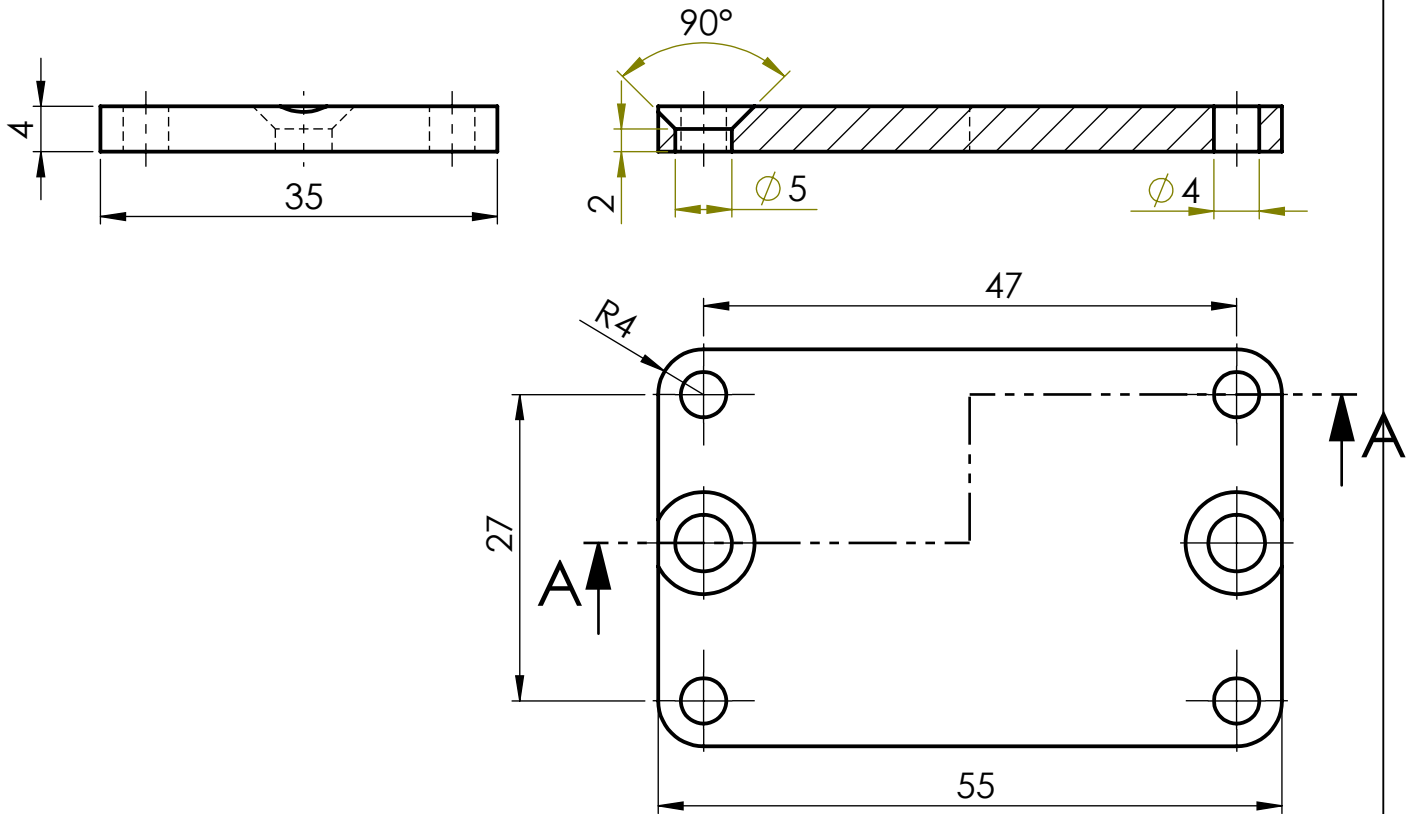
	<p>ESSA.TLEMCEN</p>	<p>Scale: 3/2</p>
<p>Preparatory cycle</p>	<p>Corps</p>	<p>Name:</p>
<p>Sg: Gr:</p>		<p>First name :</p>





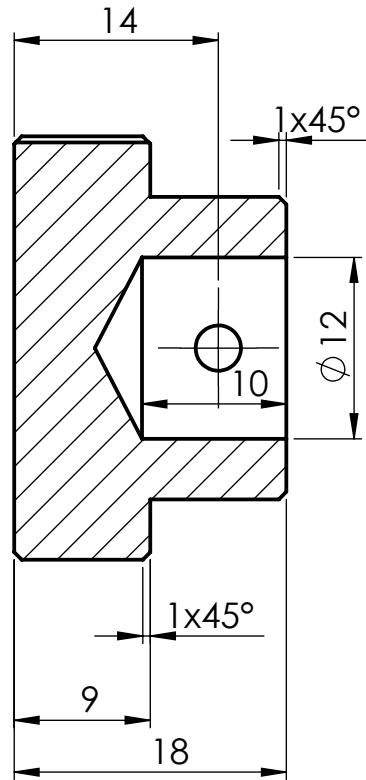
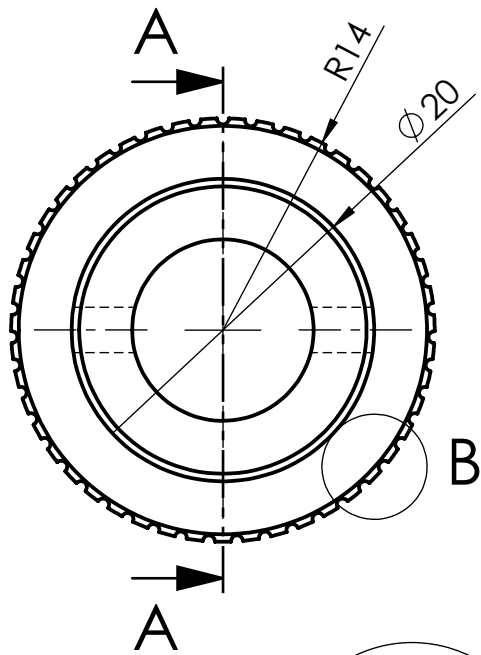
	<p>ESSA.TLEMCEN</p>	<p>Scale: 2/1</p>
<p>Preparatory cycle</p>	<p>Axle</p>	<p>Name:</p>
<p>Sg: Gr:</p>		<p>First name :</p>



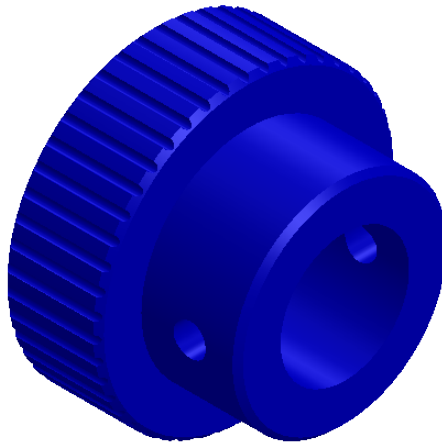
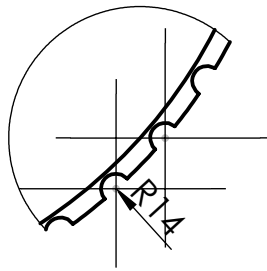


	ESSA.TLEMCEN	Scale: 3/2
Preparatory cycle	Plate	Name:
Sg: Gr:		First name :





DETAIL B
SCALE 5 : 1



	<p>ESSA.TLEMCEN</p>	<p>Scale: 2/1</p>
<p>Preparatory cycle</p>	<p>Button</p>	<p>Name:</p>
<p>Sg: Gr:</p>		<p>First name :</p>



FIXING CYLINDER

The functioning of the device.





The assembly drawing shown illustrates a hydraulic clamp designed to hold a workpiece securely in position during machining operations. The clamping force is generated by pressurized oil acting on piston 2. The clamp is mounted on the machine-tool table to ensure stable and precise positioning.

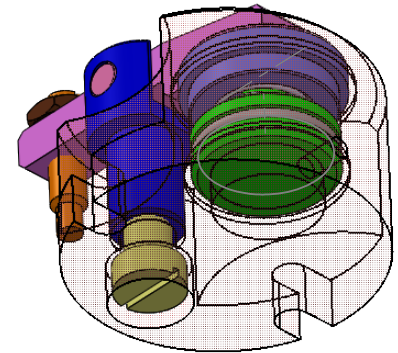
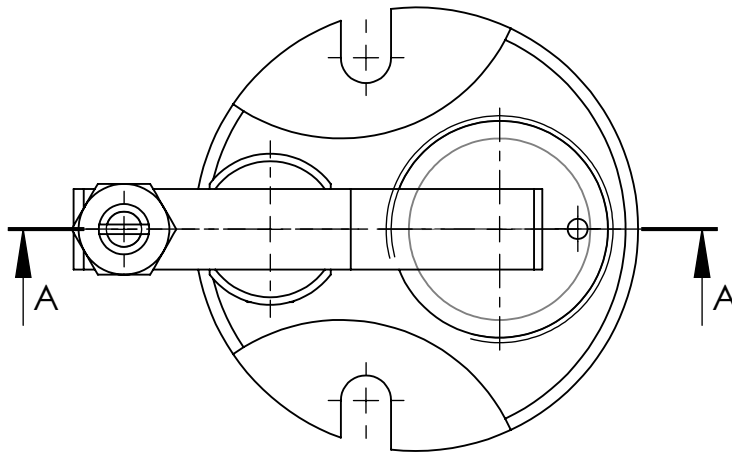
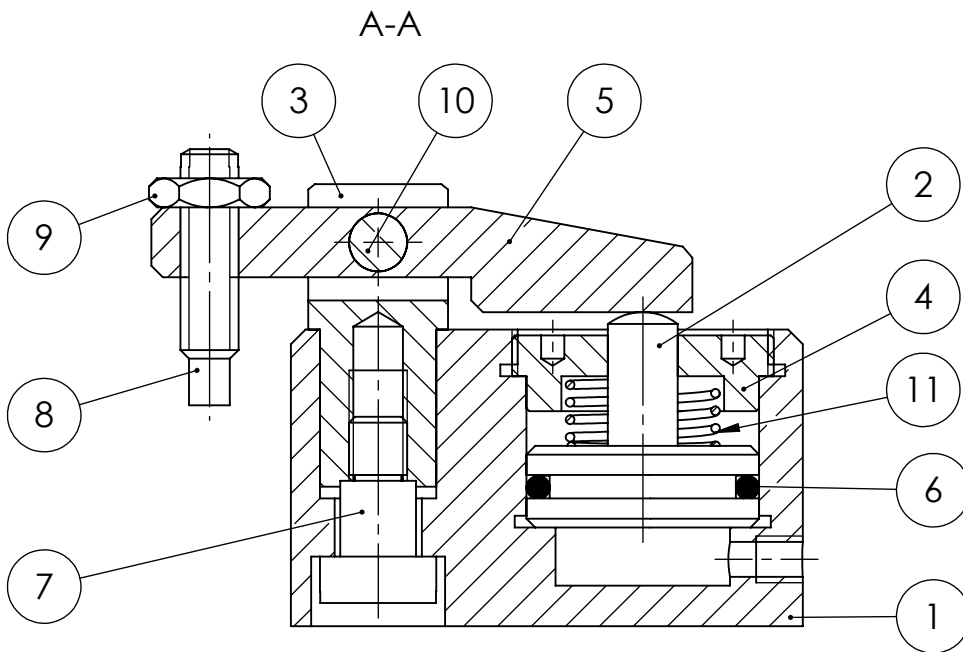
Work to be done.

1. Study of the Assembly Drawing

- a) At what scale is the assembly drawing made.
- b) What is the number of parts that make up the fixing cylinder device.
- c) Name the moving and fixed parts.
- d) Give the numbers of the standard parts.

2. Design in SolidWorks

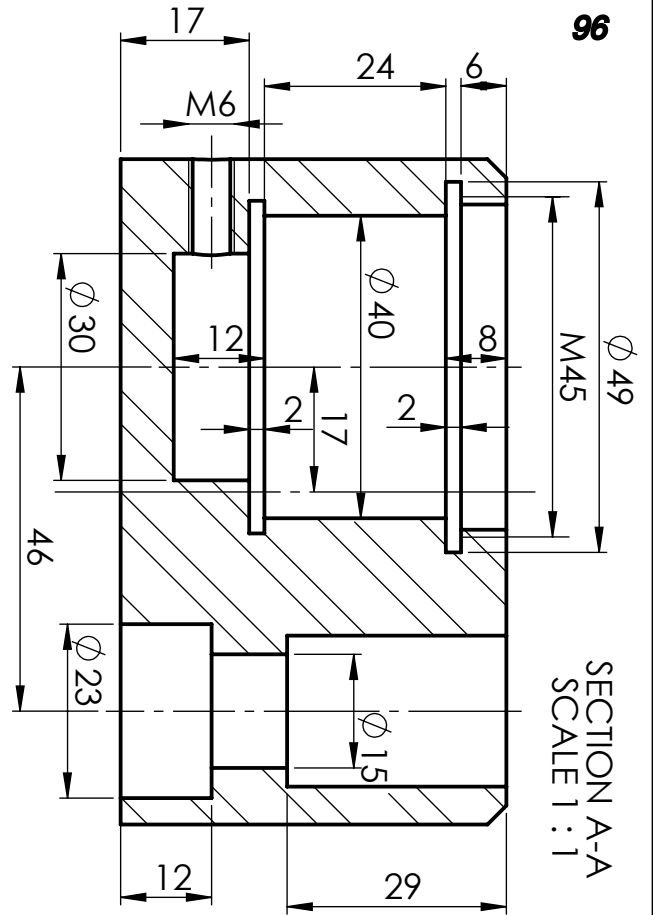
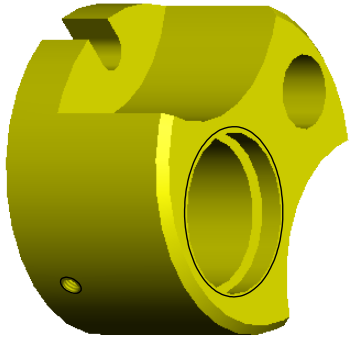
- a) Model the parts that make up the clamping device and save them in a folder. 
- b) Assemble the device; for the standard parts, import them from the SolidWorks virtual library. 
- c) Create the detailed drawings of the parts (*part definition drawings*). 
- d) Create the drawing of the complete assembly (*assembly drawing*). 



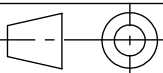
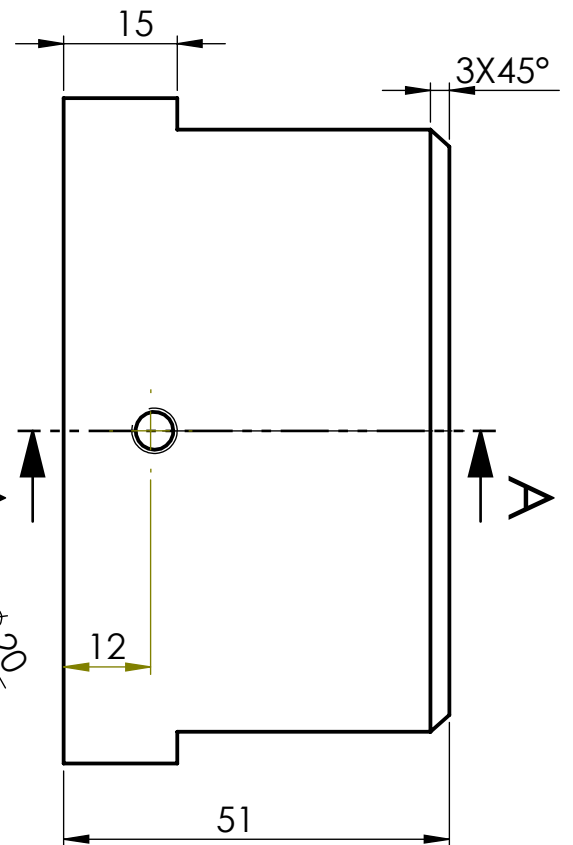
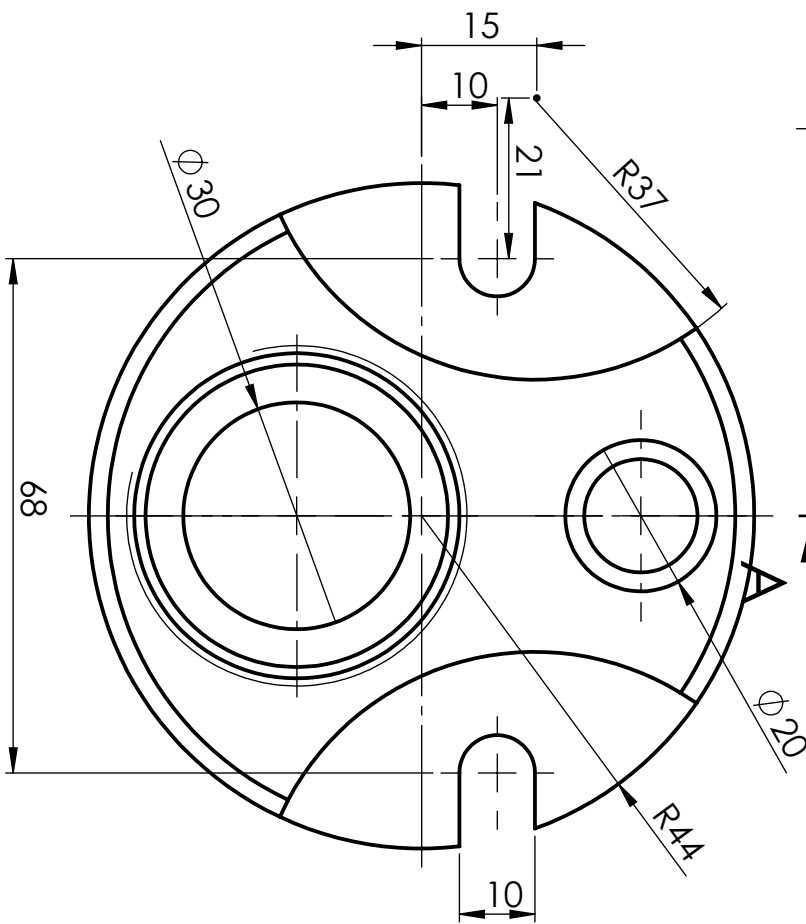
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Frame		1
2	Piston		1
3	Yoke		1
4	Cover		1
5	Lever		1
6	O-ring		1
7	Yoke screw		1
8	Screw M10		1
9	écrou_H M10		1
10	Lever shaft		1
11	Spring		1

	ESSA.TLEMCEN	Scale : 1/1.5
Préparatory cycle	FIXING CYLINDER	Name:
Gr:		FirstName:





SECTION A-A
SCALE 1 : 1



ESSA.TLEMCEN

Scale 1/1

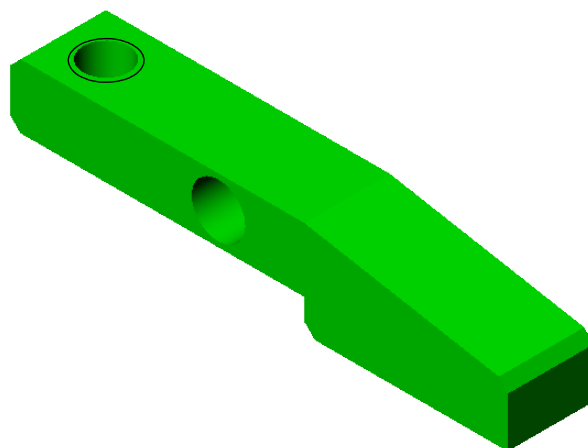
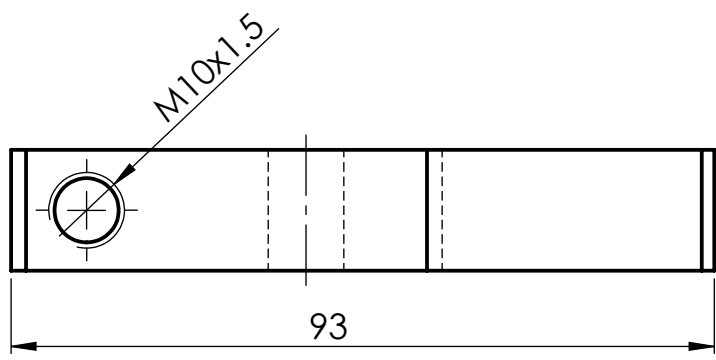
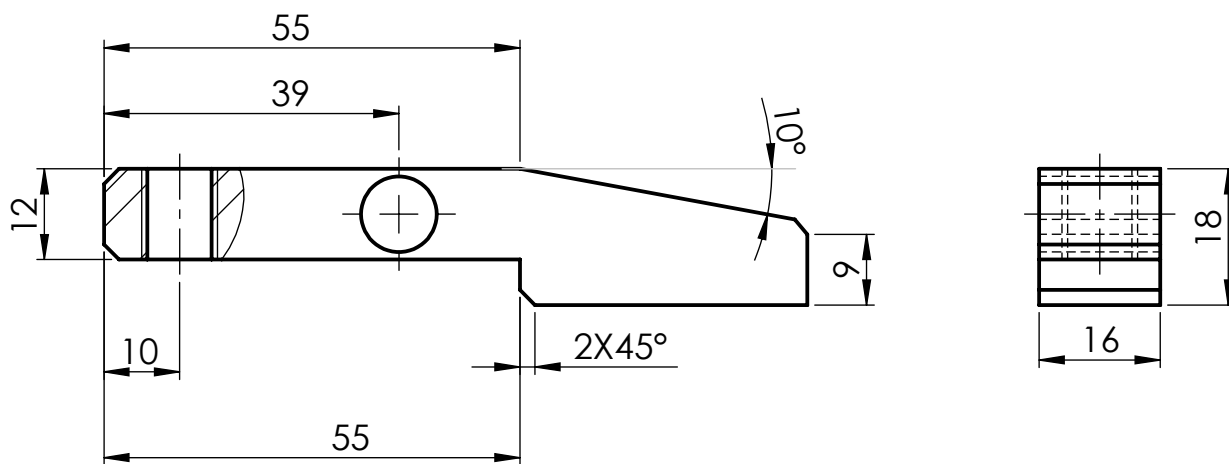
Preparatory cycle

Frame

Name

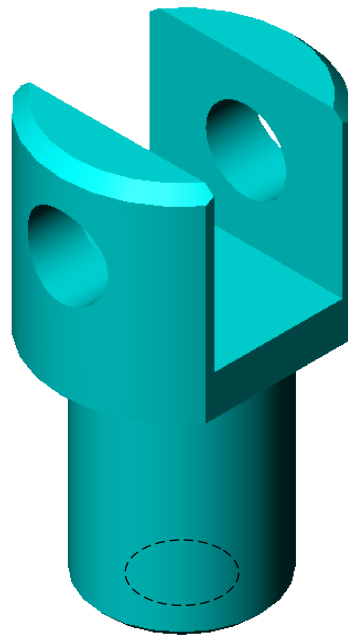
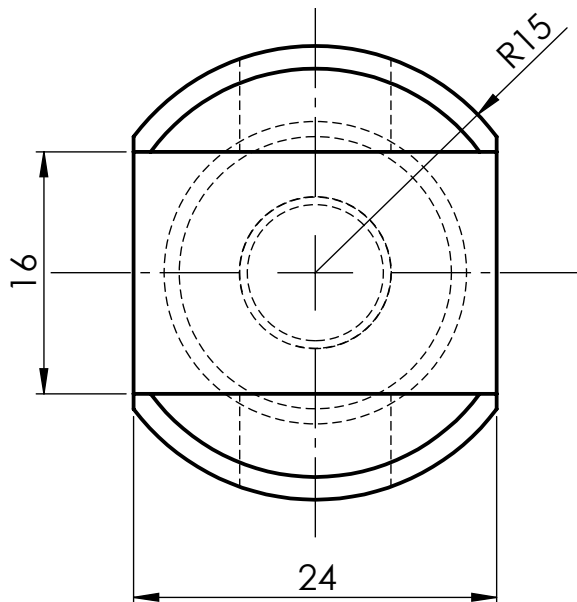
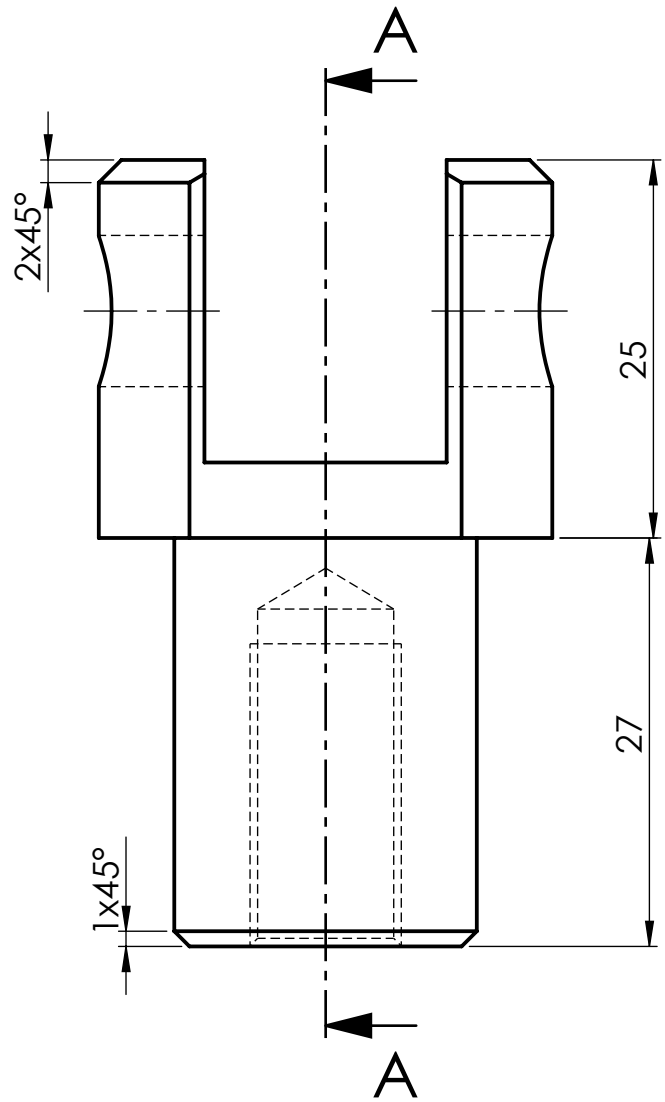
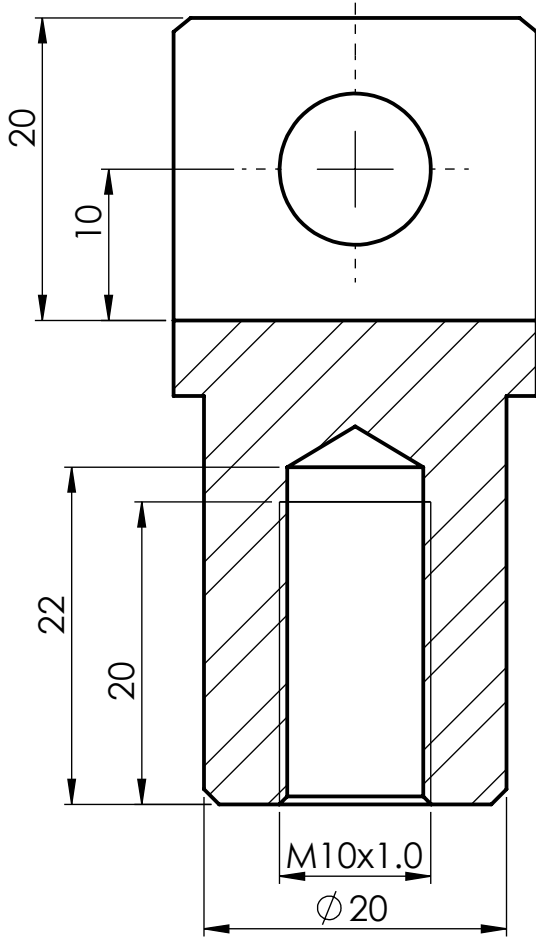
Gr:

first name



	<p>ESSA.TLEMCEN</p>	<p>Scale: 1/1</p>
<p>Preparatory cycle</p>	<p>Lever</p>	<p>Name:</p>
<p>Sg: Gr:</p>		<p>First name :</p>

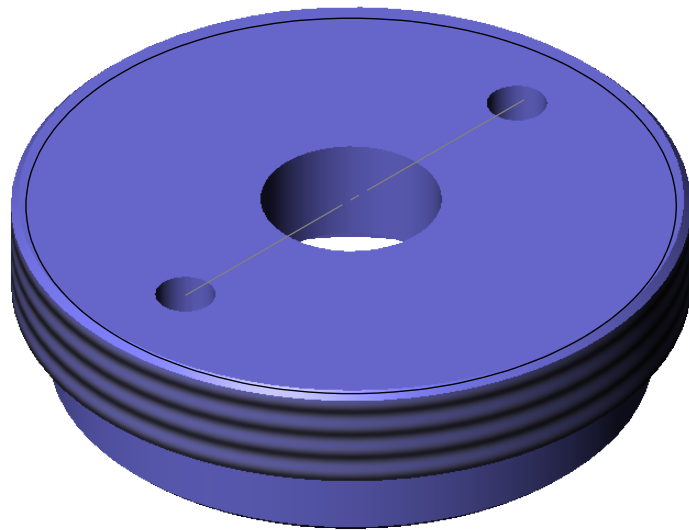
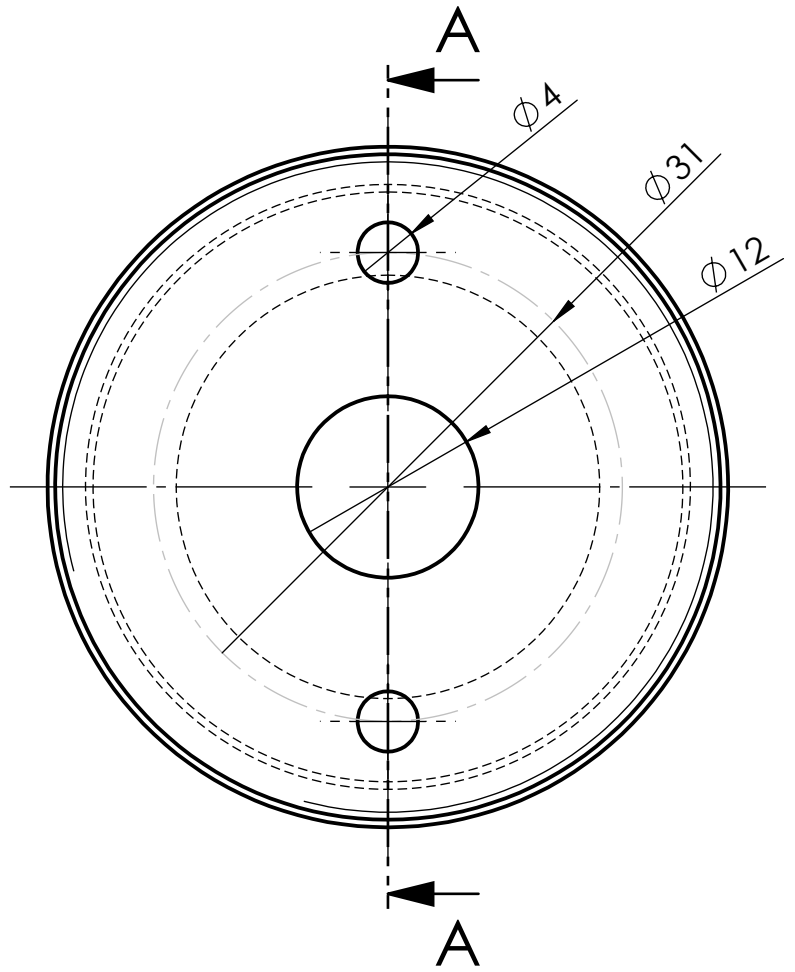
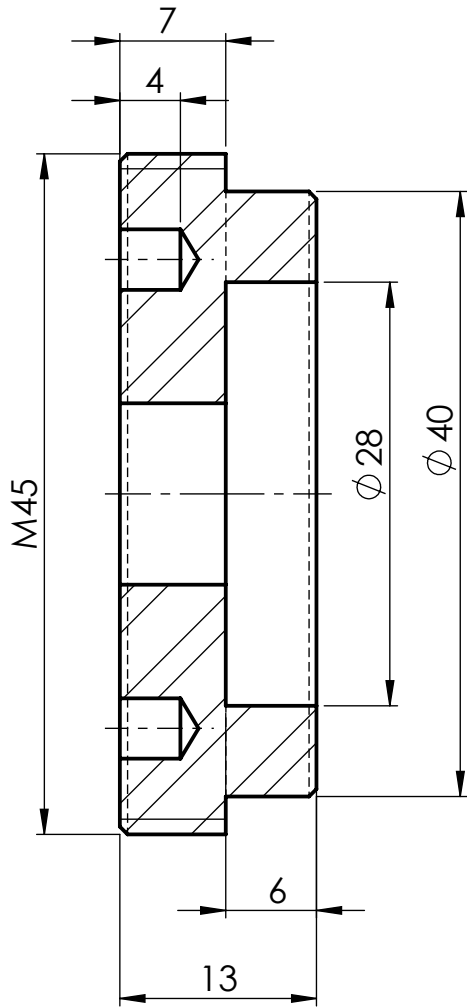
SECTION A-A
SCALE 2 : 1



	<p>ESSA.TLEMCEN</p>	<p>Scale: 2/1</p>
<p>Preparatory cycle</p>	<p>Yoke</p>	<p>Name:</p>
<p>Sg: Gr:</p>		<p>First name :</p>



SECTION A-A
SCALE 2 : 1



	<p>ESSA.TLEMCEN</p>	<p>Scale: 2/1</p>
<p>Preparatory cycle</p>	<p>Cover</p>	<p>Name:</p>
<p>Sg: Gr:</p>		<p>First name :</p>



YOKE-TYPE LOCKING DEVICE

The function of the assembly drawing.





The assembly drawing shown is designed to clamp metal bars with a prismatic cross-section in order to cut them using a saw.

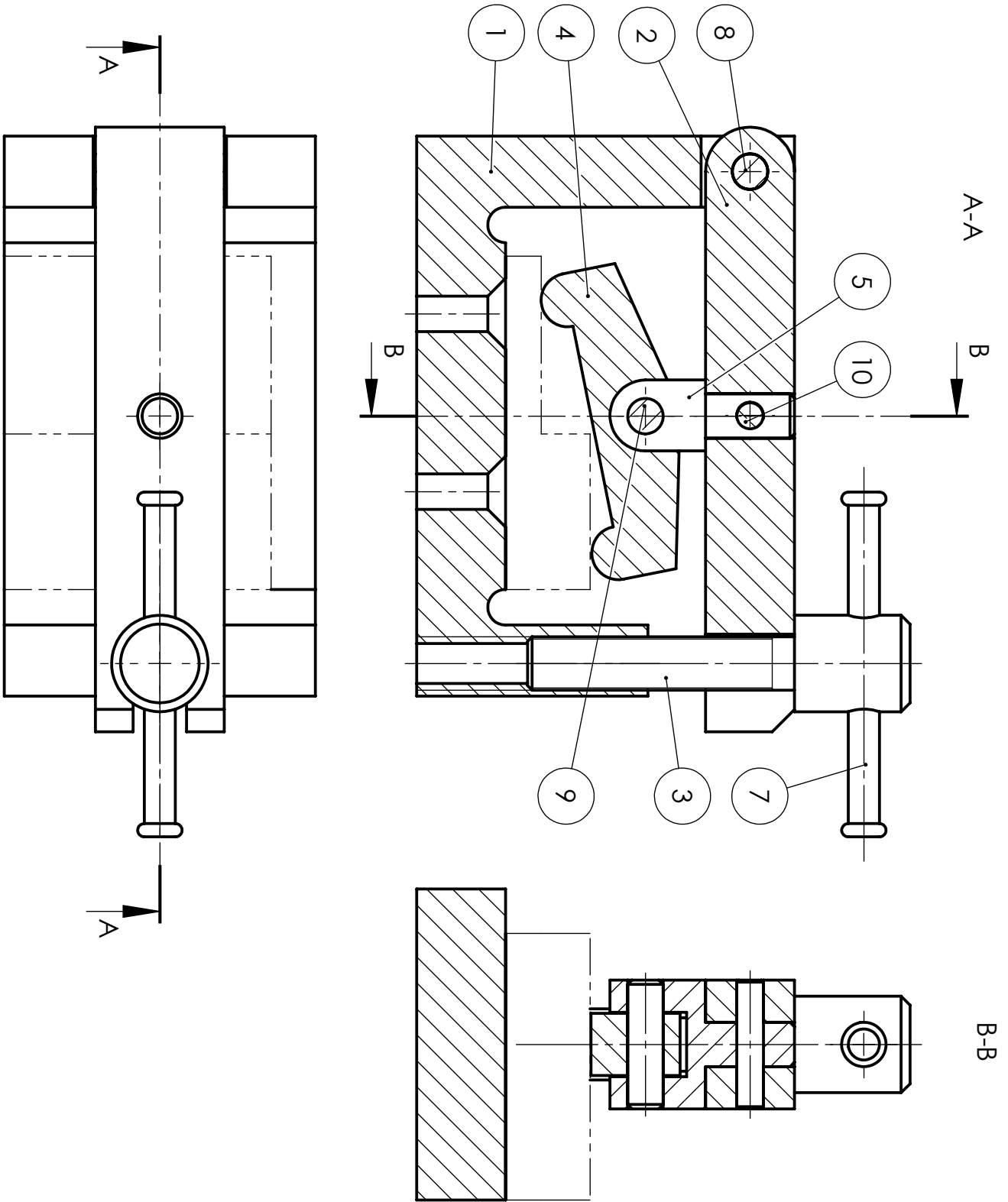
Work to be done.

1. Study of the Assembly Drawing

- a) At what scale is the assembly drawing made.
- b) What is the number of parts that make up the yoke-type locking device.
- c) Name the moving and fixed parts.
- d) Give the numbers of the standard parts.

2. Design in SolidWorks

- a) Model the parts that make up the yoke-type locking device and save them in a folder. 
- b) Assemble the device; for the standard parts, import them from the SolidWorks virtual library. 
- c) Create the detailed drawings of the parts (*part definition drawings*). 
- d) Create the drawing of the complete assembly (*assembly drawing*). 

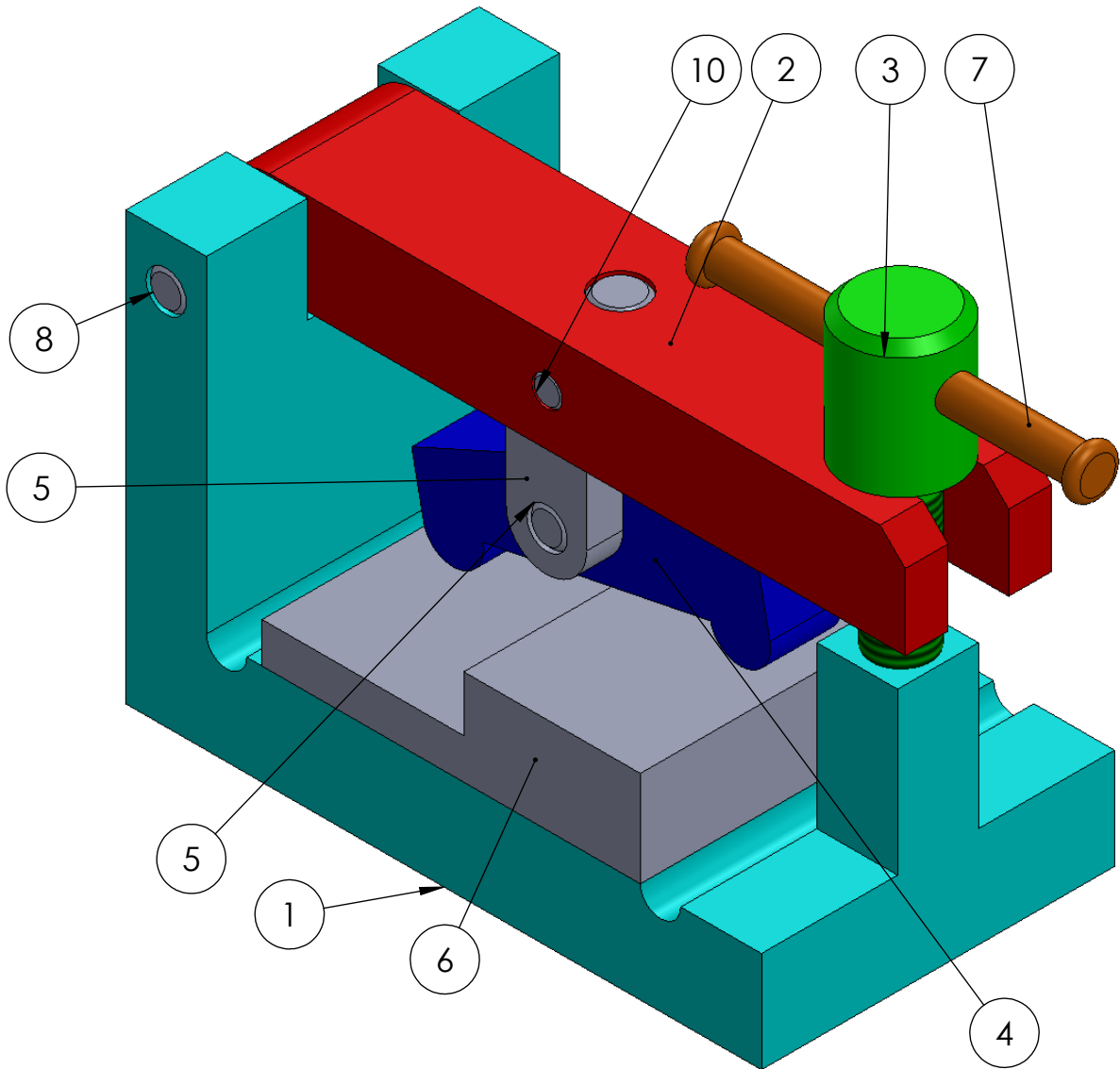


Preparatory cycle
Gr:

ESSA . TLEMCEN

**YOKE-TYPE LOCKING
DEVICE**

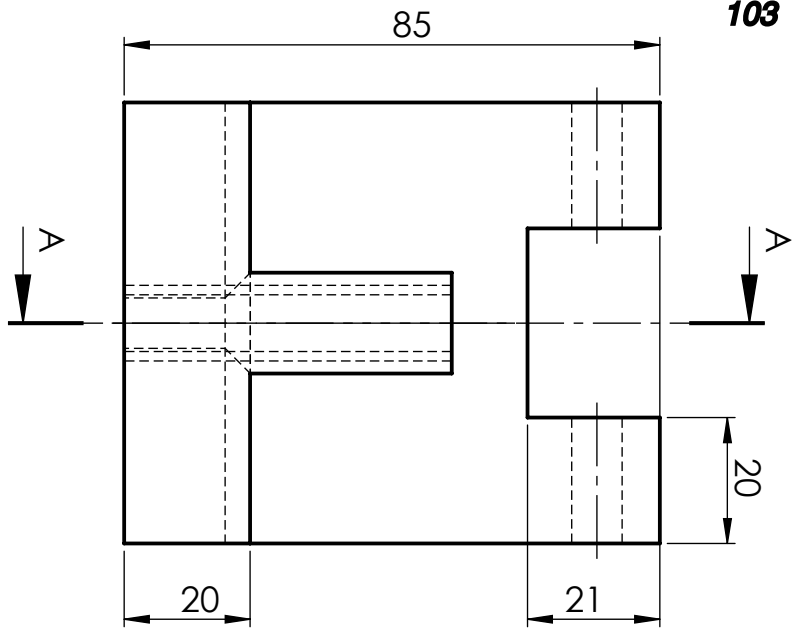
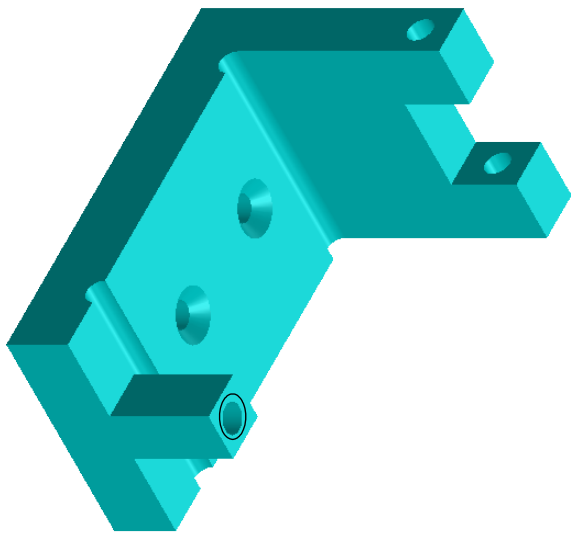
Scale 1/1
Name
first name



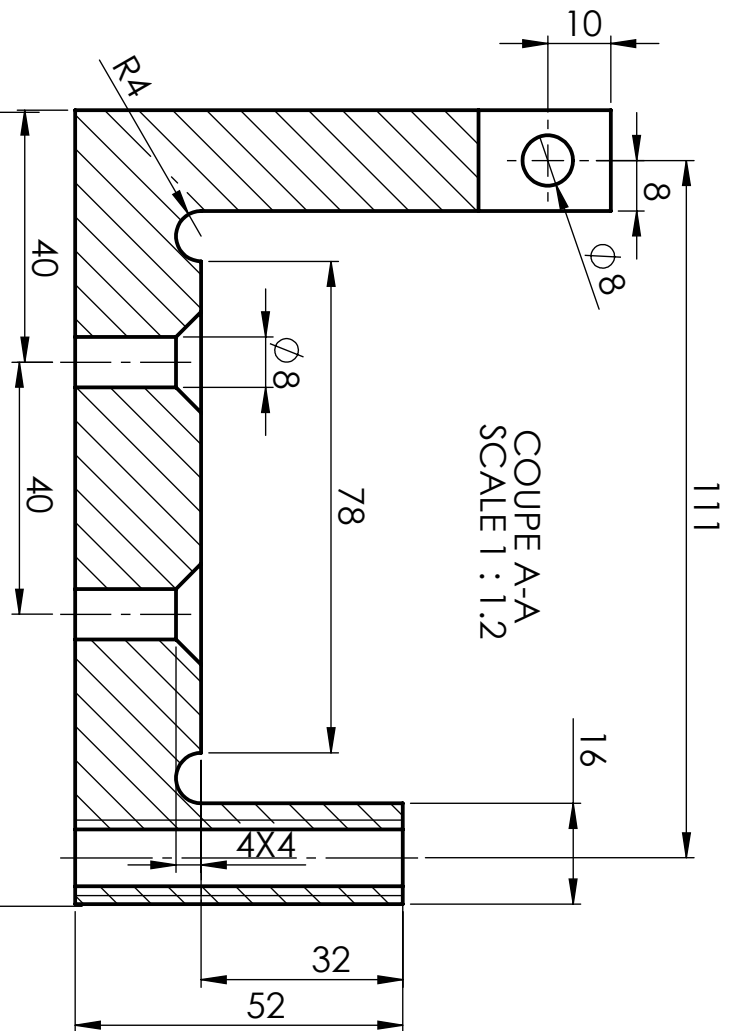
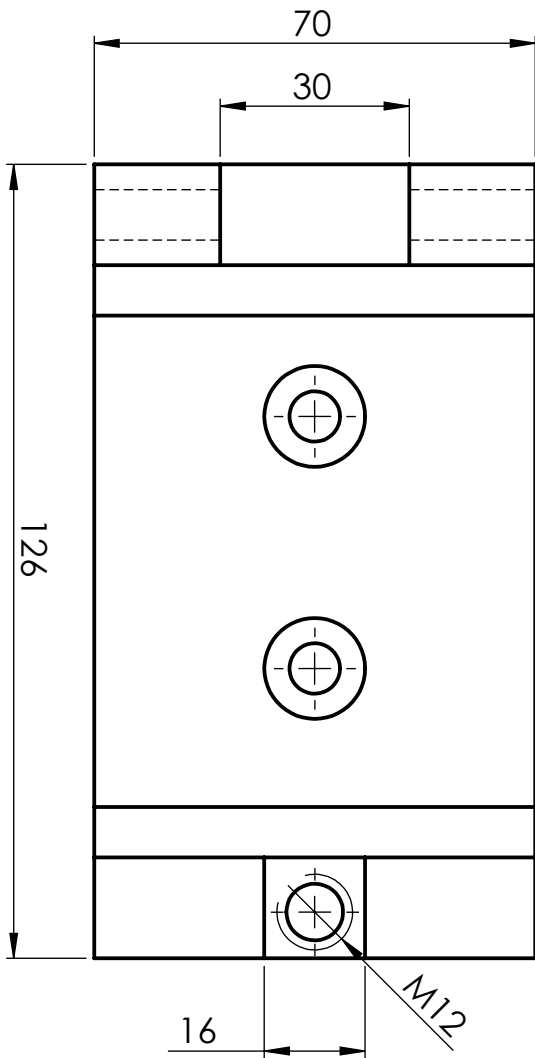
ITEM NO.	PART	MATERIAL	QTY.
1	Support	Font	1
2	Flange	A42	1
3	Operating screw	A42	1
4	spreader bar		1
5	Screed	A42	1
6	Part for cutting		1
7	Stem		1
8	Axe 70	C35	1
9	Axe 29	C35	1
10	AXE 6	C35	1

	ESSA . TLEMCEN	Scale : 1/1
Préparatory cycle	YOKE-TYPE LOCKING DEVICE	Name:
Gr:		FirstName:





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COUPE A-A
SCALE 1 : 1.2

Preparatory cycle
Gr:

ESSA.TLEMCEN

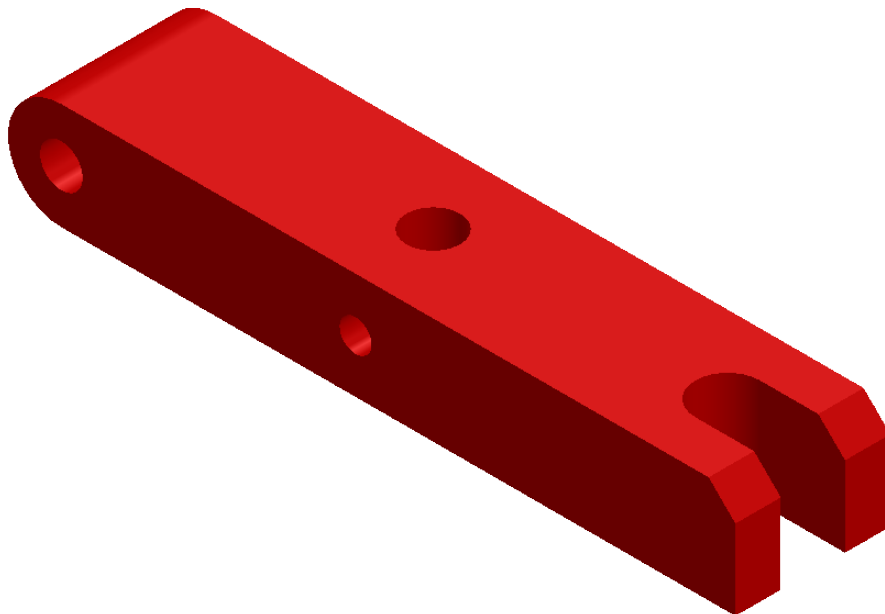
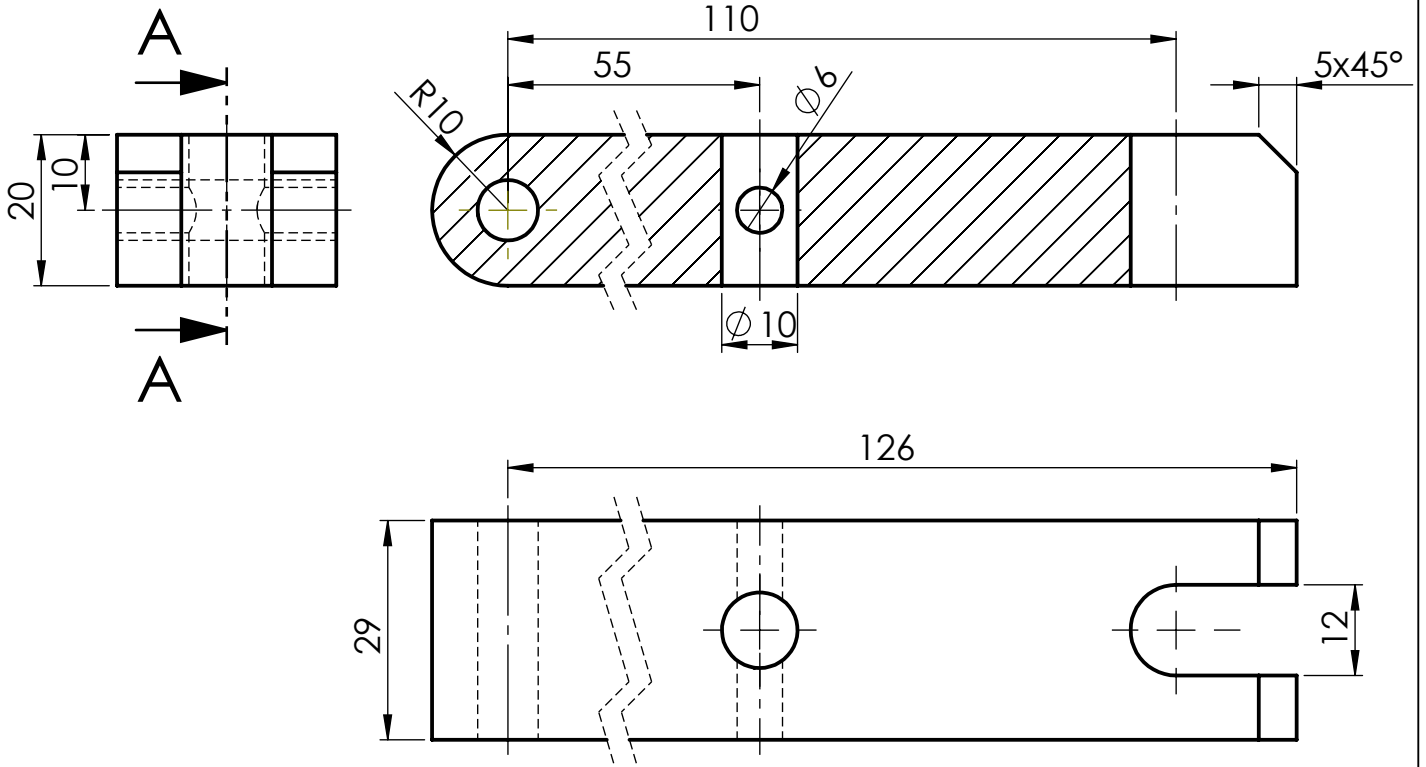
Scale 1/1

Support

Name

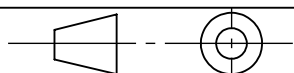
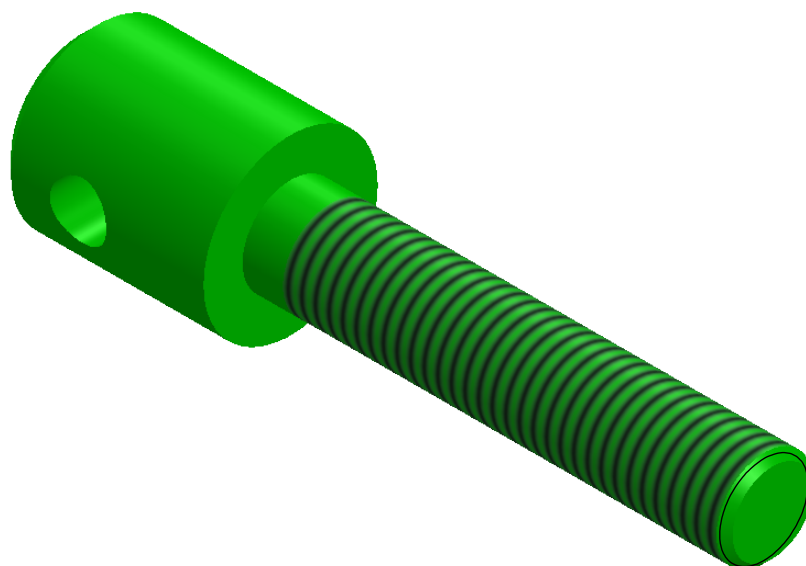
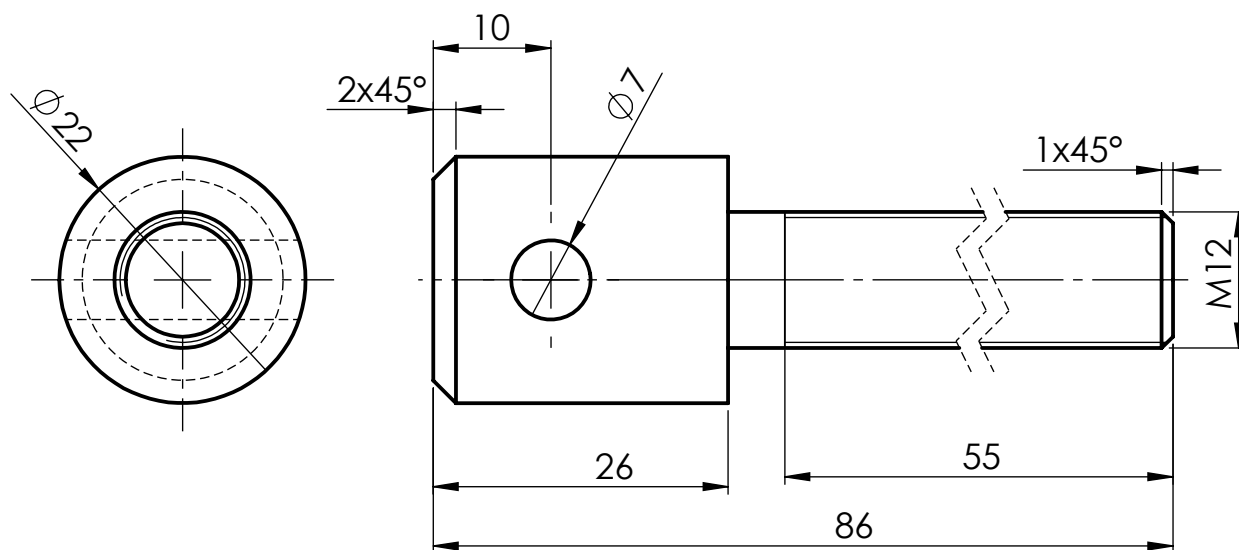
first name

SECTION A-A
SCALE 1 : 1



	ESSA.TLEMCEN	Scale:
Preparatory cycle	Flange	Name: 1/1
Sg: Gr:		First name :





Preparatory cycle

Sg: Gr:

ESSA.TLEMCEN

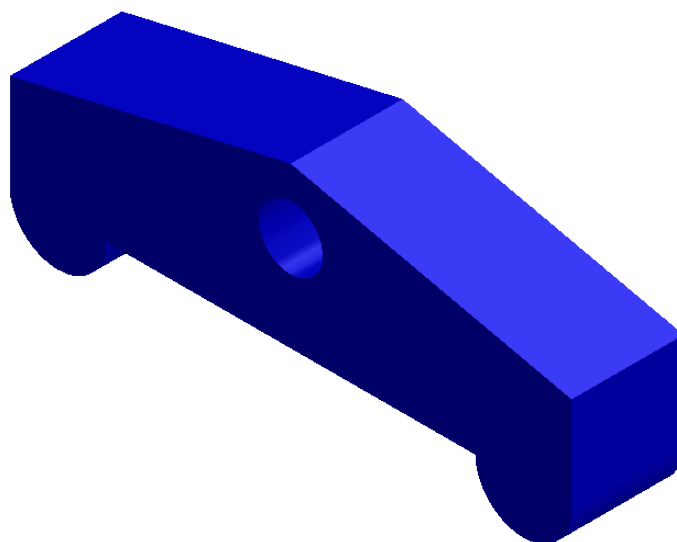
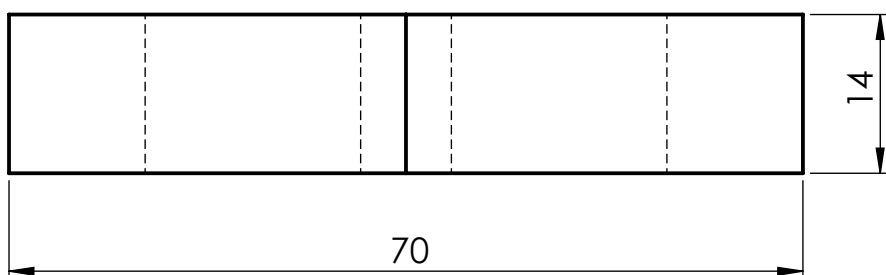
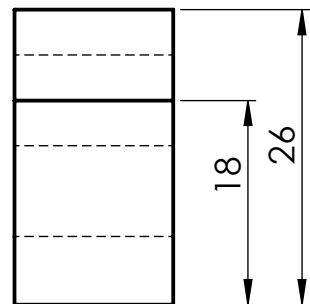
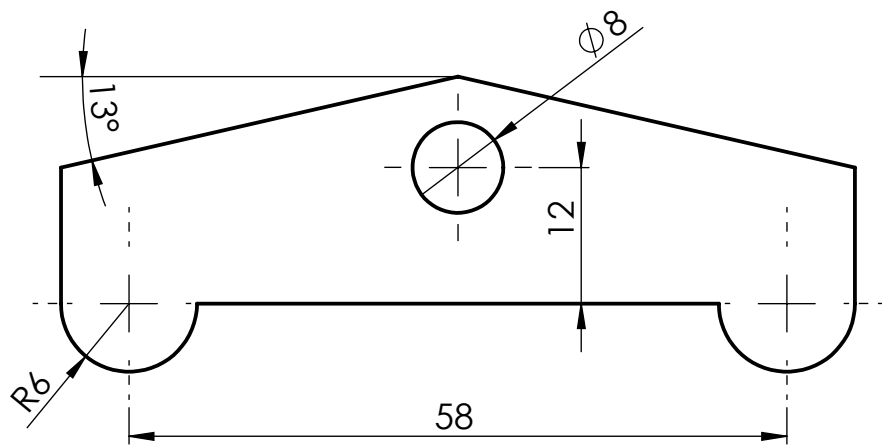
Operating screw

Scale: 3/2

Name:

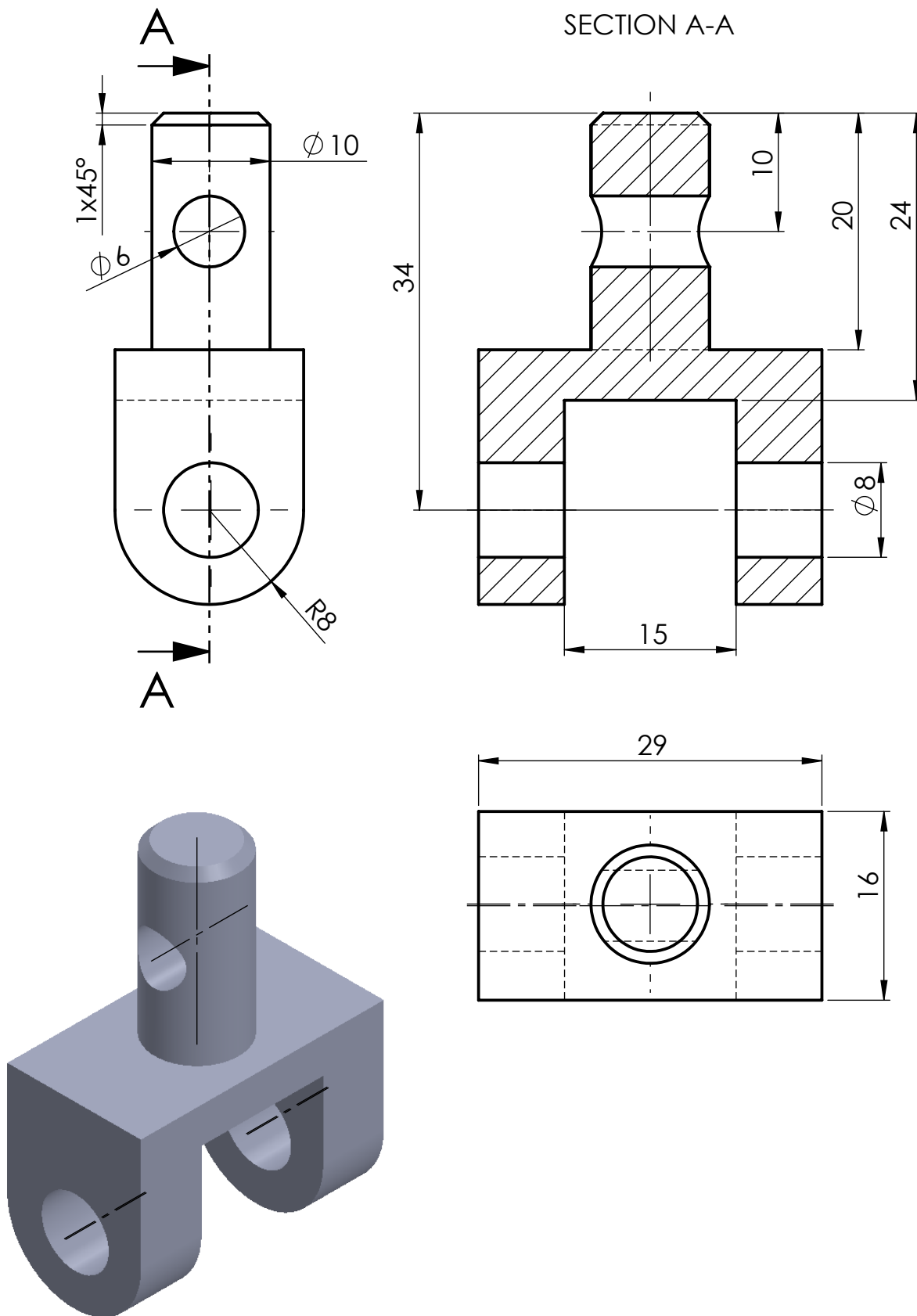
First name :





	<p>ESSA.TLEMCEN</p>	<p>Scale: 3/2</p>
<p>Preparatory cycle</p>	<p>Spreader bar</p>	<p>Name:</p>
<p>Sg: Gr:</p>		<p>First name :</p>





	<p>ESSA.TLEMCEN</p>	<p>Scale: 2/1</p>
<p>Preparatory cycle</p>	<p>Screed</p>	<p>Name:</p>
<p>Sg: Gr:</p>		<p>First name :</p>



BIBLIOGRAPHY

- 1- André Chevalier. Guide du dessinateur industriel. Hachette technique. 2004
- 2- André Ricordeau. Méthode active de dessin technique. castiella 2003†
- 3- André Chevalier. Guide du technicien en productique. Hachette technique. 2001
- 4- K .MORLING. Geometric and Engineering Drawing . Reprinted by Butterworth Heinemann.Third edition 2010