



SUBJECT

TECHNICAL DRAWING

TOPIC

CREATION OF COMPOSITE SOLIDS

CLASS

S.S. 3



LEARNING OBJECTIVES

At the end of the lesson, learners should be able to:

- use Autocad software to draw usable engineering item.



CREATION OF COMPOSITE SOLIDS

Complex solids can be created from both solid primitives and swept solids. Boolean operations can be used to create composite solids from two or more solids. Solid modeling is a built-in facility with AutoCAD 14, which provides for region and solid modeling. Region models are two dimensional closed areas consisting of lines, polylines, arcs, circles and ellipses.



From these, mass properties and surface areas can be assessed. Solid models are true shape 3D objects. The region command allows creating 2D enclosed areas from existing overlapping closed shapes (loops).

CREATION OF COMPOSITE SOLIDS

- To create a region

Command: REGION

1. Select objects: select objects to be combined into a region
2. Press: ↵

A composite region may be created by subtracting, combining or finding the intersection of regions.



- To create composite regions :

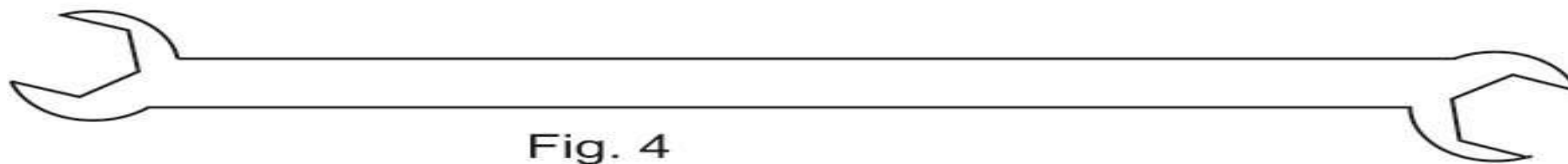
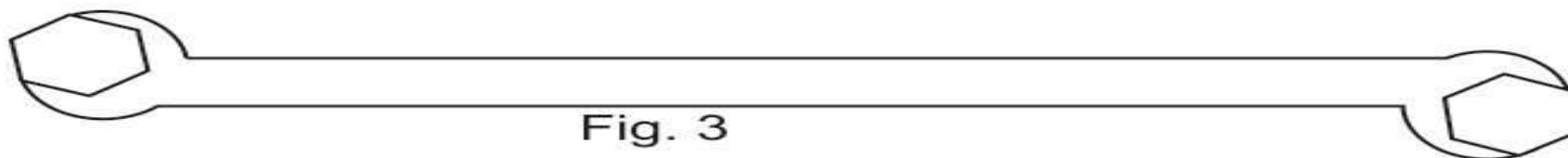
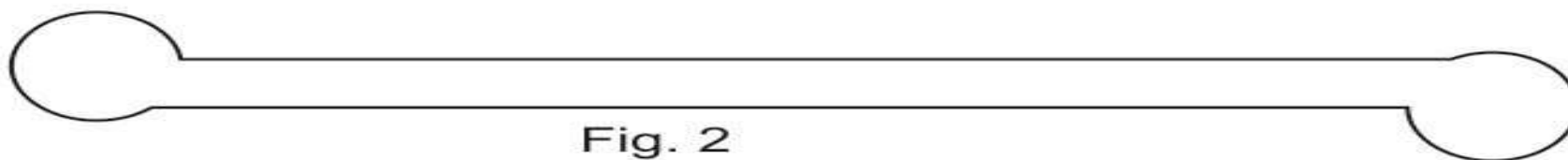
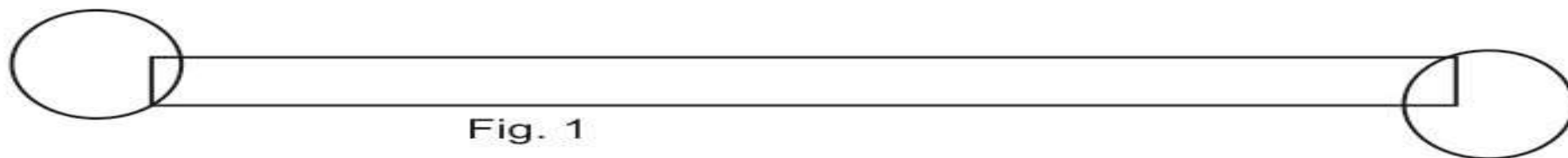
Command: Union, Subtract and Intersect

1. Select objects: select the regions to be combined into a composite region

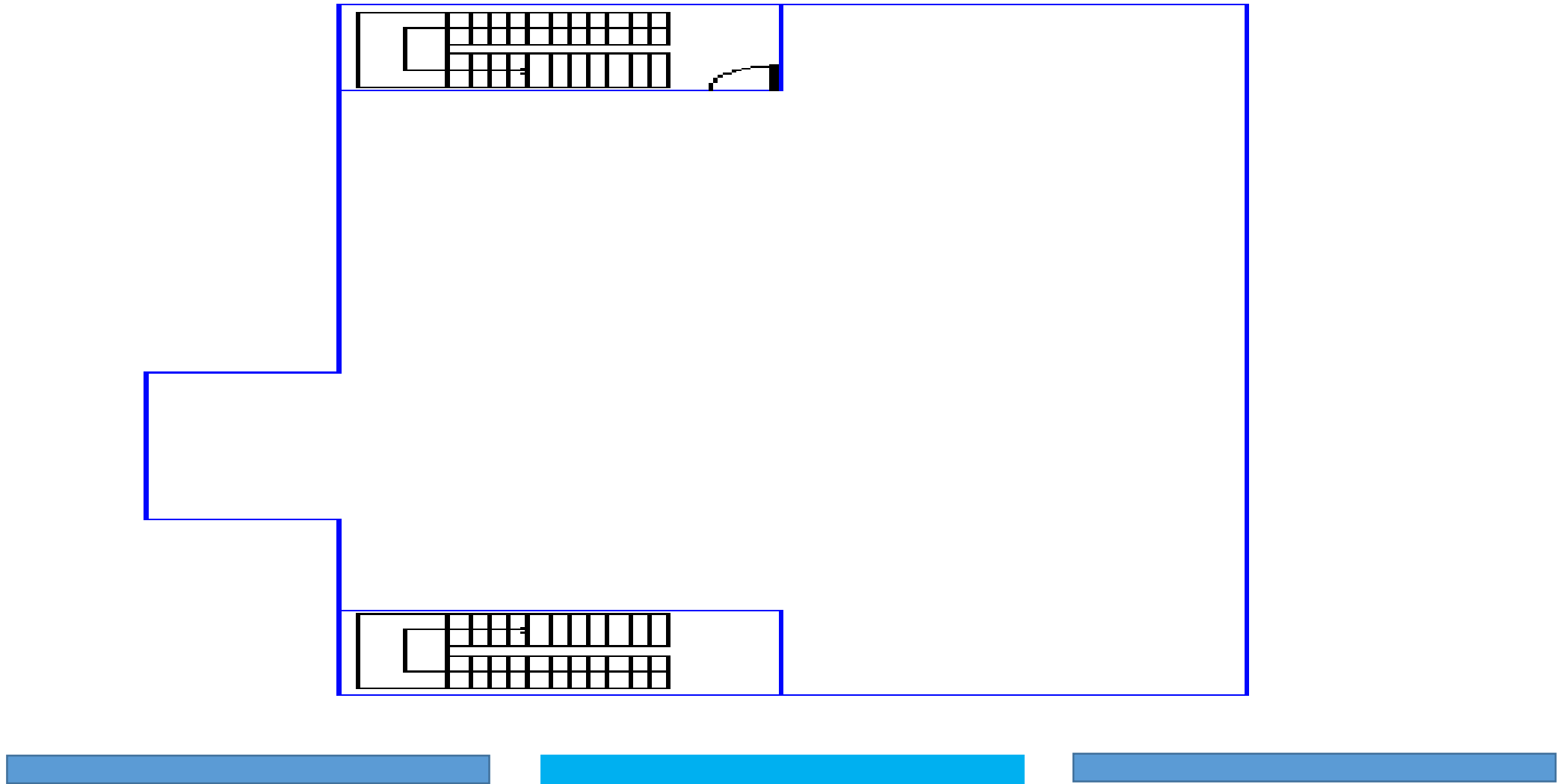
2. Press ↵ to end the command

Objects may be selected in any order to unite them with the union command and when it is required to subtract one region from the other, first select the region from which it is required to subtract. Condition: these regions exist overlapping, earlier to the operations.

CREATION OF COMPOSITE SOLIDS



CREATION OF STAIRS ON FLOOR PLAN



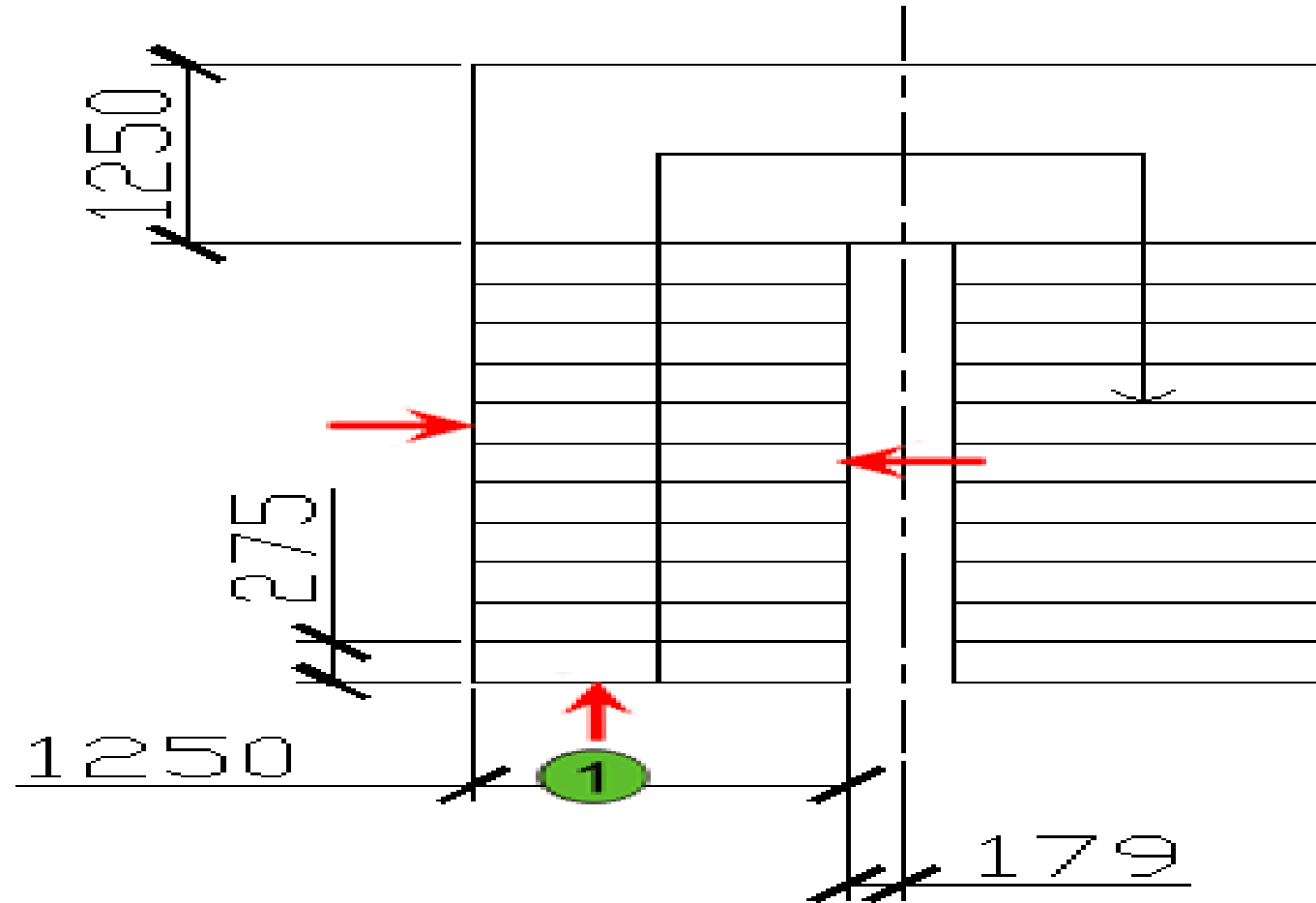
CREATION OF STAIRS ON FLOOR PLAN

1. open M_ARCH-Challenge- CHP03.dwg.
2. Create geometry to represent the stairs for the building. You will create the stair in an open area of your building and then rotate it and move it into position:
 - Begin with a single line (1).



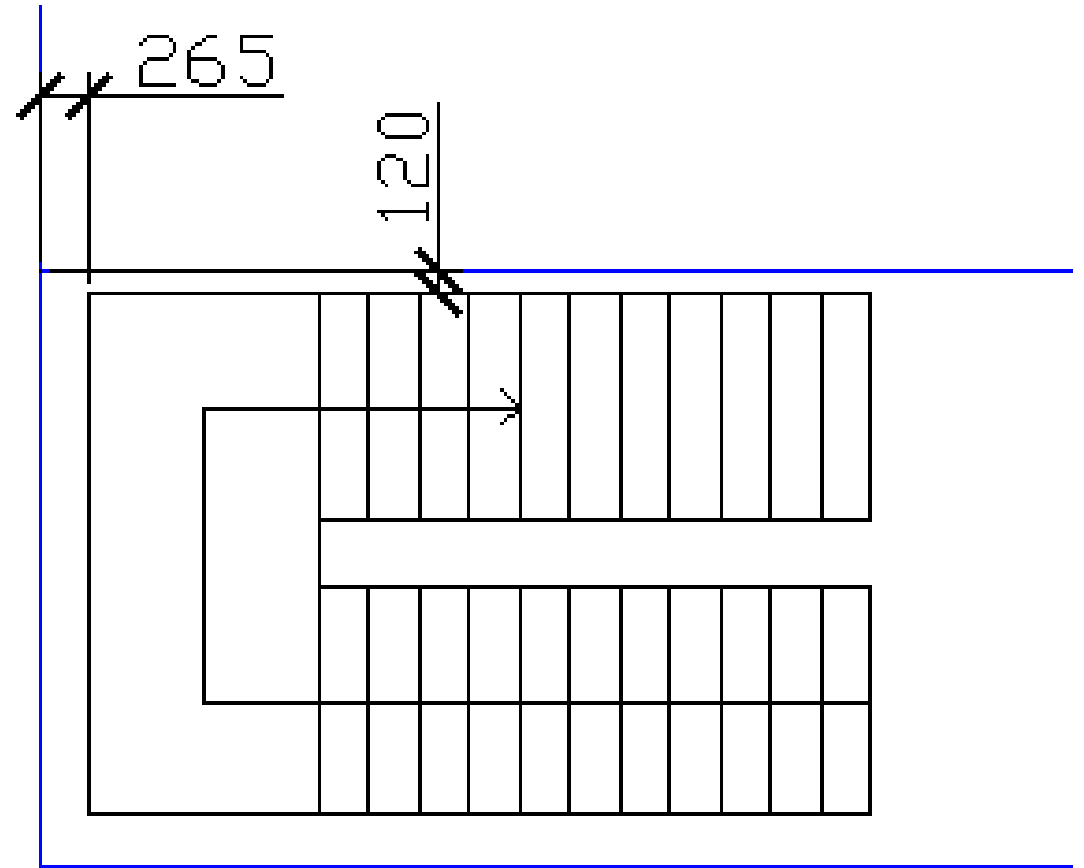
- Array the line to create the stairs on the left.
- Add the vertical lines on the left and the right.
- Mirror all the lines to create the stairs on the right.
- Create the remaining lines using Otrack and direct distance entry.
- Do not create the centerline, it is there for dimensional purposes only.

CREATION OF STAIRS ON FLOOR PLAN



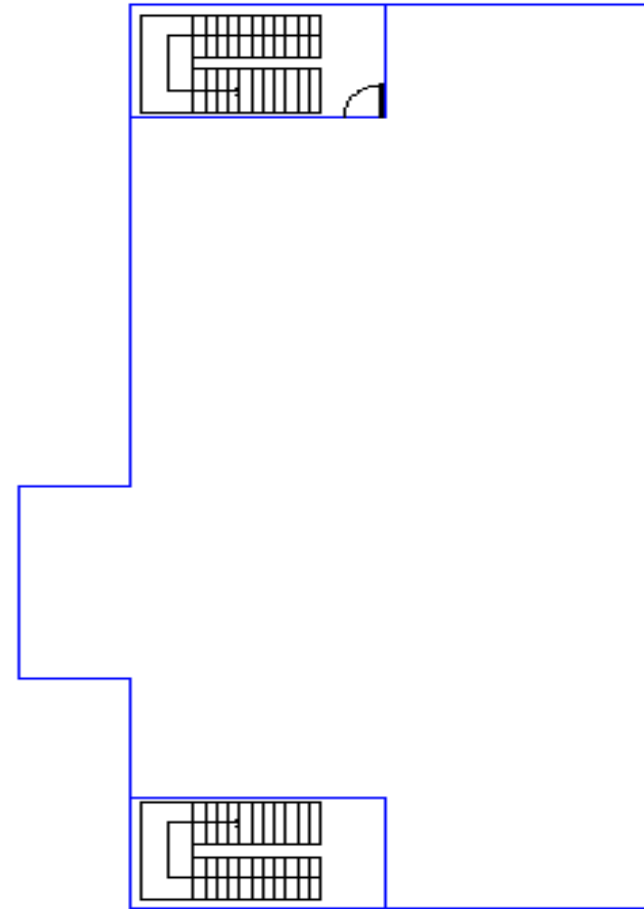
CREATION OF STAIRS ON FLOOR PLAN

3. Position the stairs in the lower stairwell as shown.



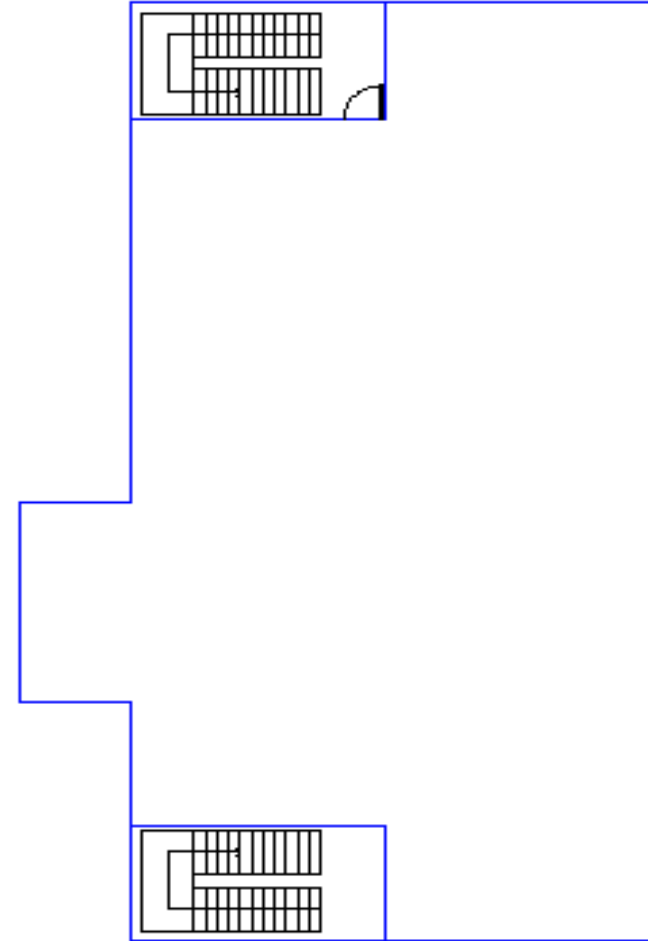
CREATION OF STAIRS ON FLOOR PLAN

4. Mirror the lower stairs to the top stairwell to complete the drawing.



CREATION OF STAIRS ON FLOOR PLAN

4. Mirror the lower stairs to the top stairwell to complete the drawing.
This is the required diagram.



EVALUATION

Using the AutoCad software, draw the following:

1. Spanner
2. Cutting Pliers
3. Hand Saw





THANK YOU

FOR WATCHING