

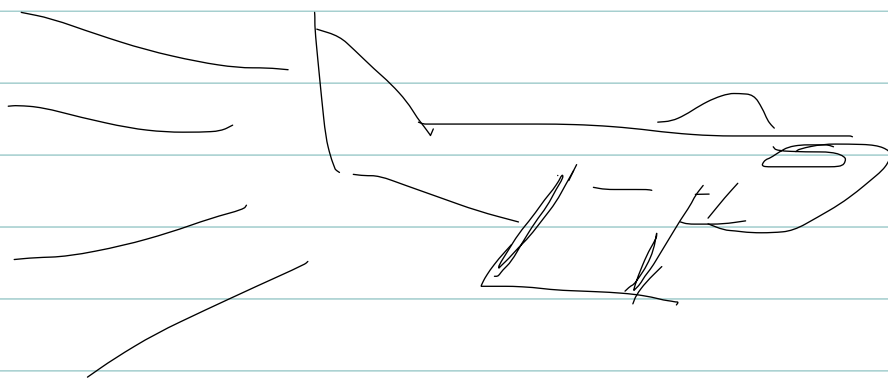
Solid Modeling and Design Lecture 1

Technical drawing

- o free hand sketching
- o CAD

Essential for mechanical
engineers

Free hand sketching



back of napkin sketch

Descriptive Geometry

developed by Gaspard
Monge

(1746 - 1818)

→ helped Ecole Polytechnique

1st engineering school

~~military engineer~~

military engineering →

Napoleon →

conquers the

world

military → civilian engineers

parallel projection



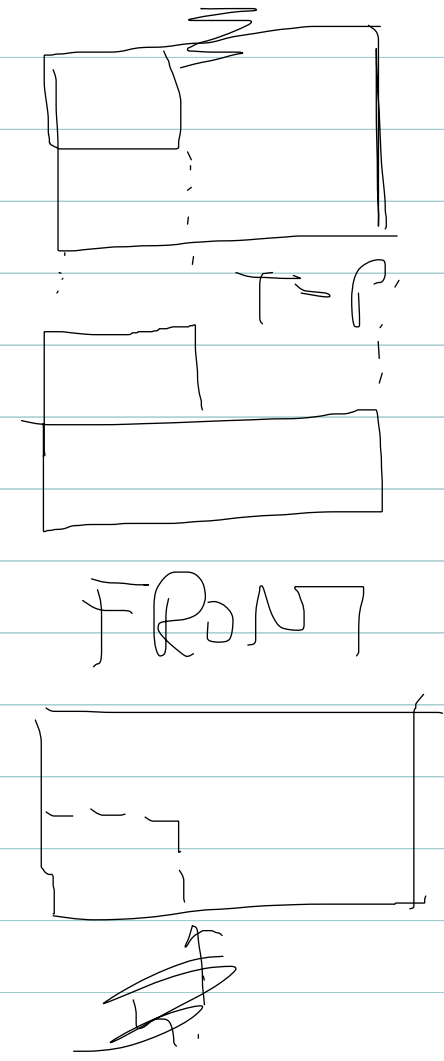
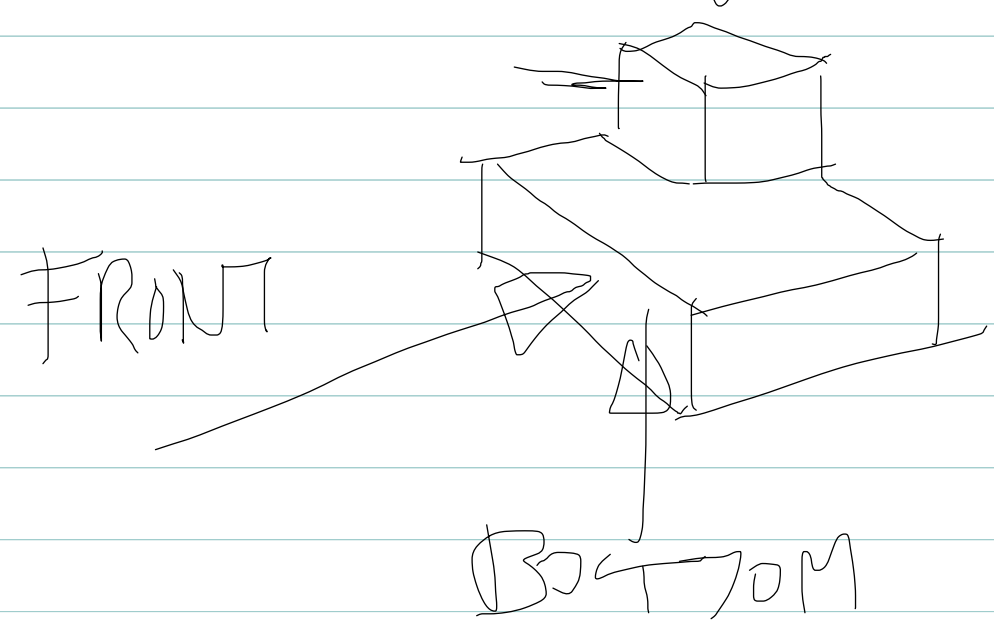
perspective projection →

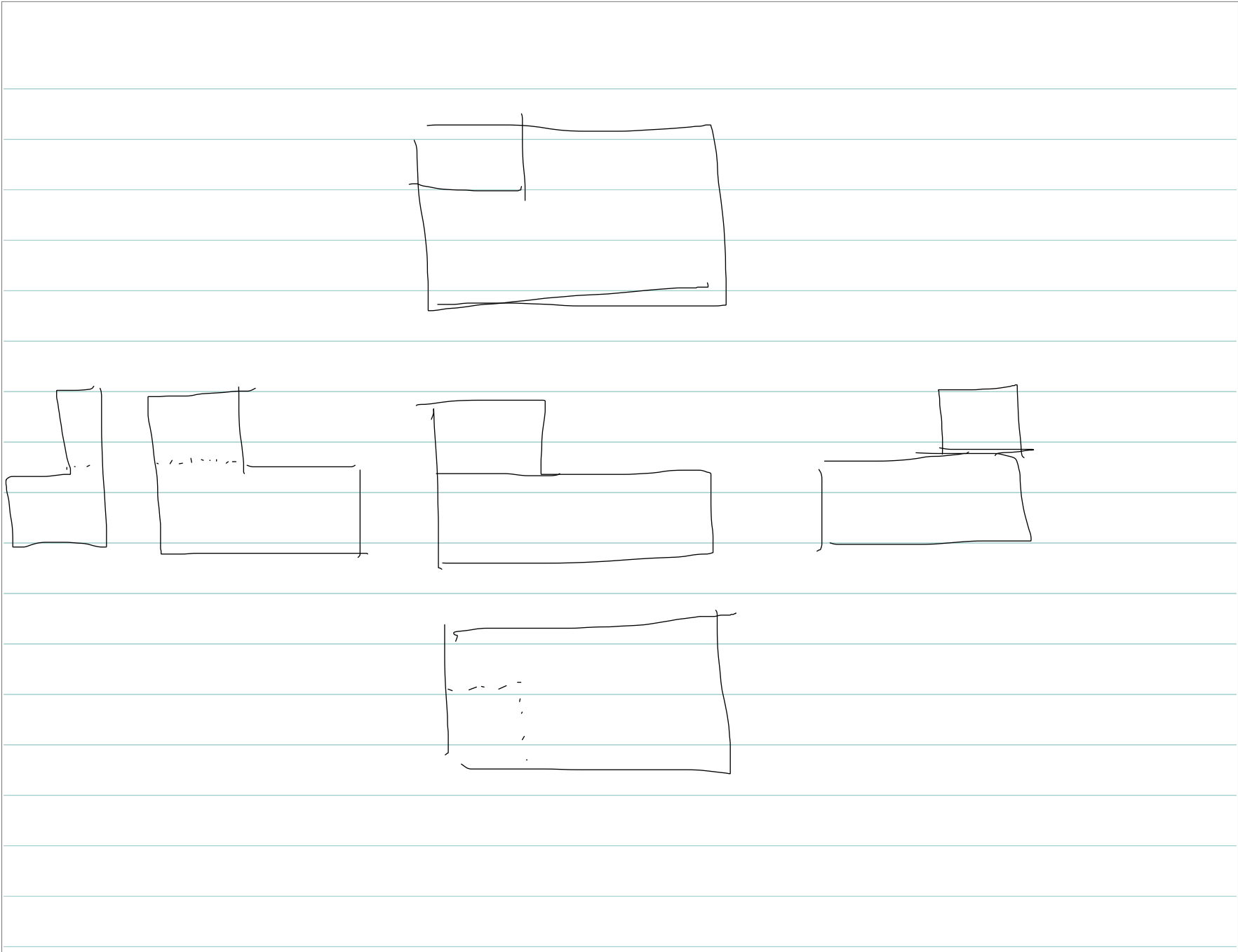
video games

~~lines further away are~~
~~shorter~~

Orthographic projections

TSP
90° rotations
↓





Solid Modeling Lecture 1

Page 2

1st angle
projection
↓

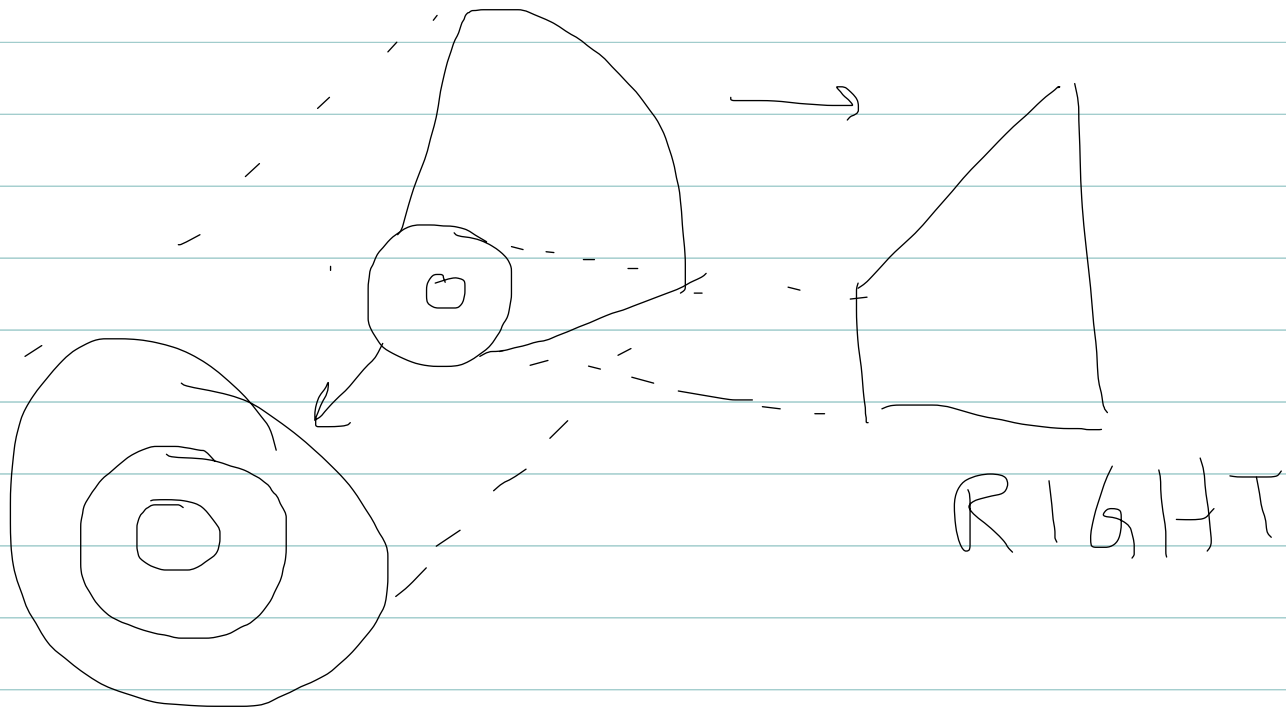
European

3rd
angle
projection

America

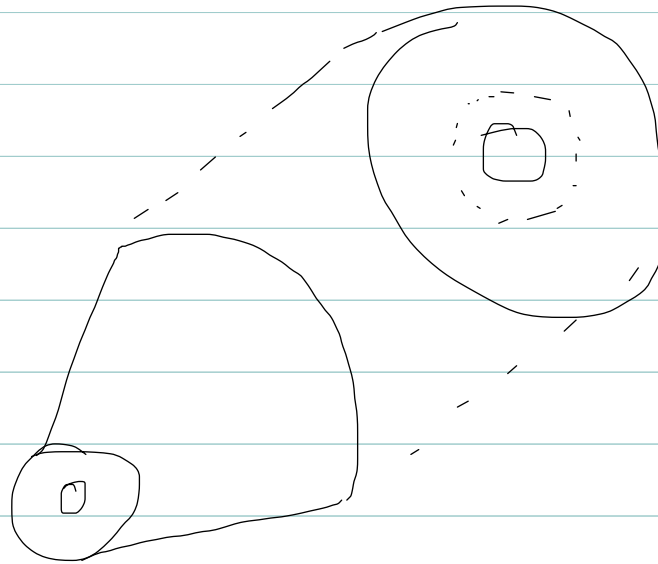


3rd angle



57
angle

FRONT

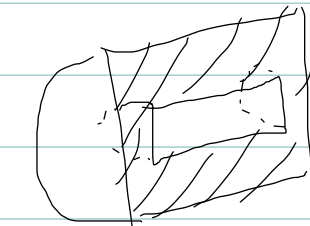
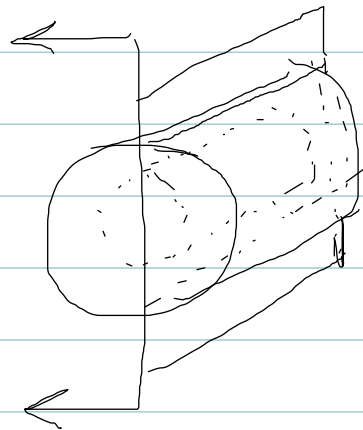


FRONT

precedence
 visible
 hidden
 section (lighter)
 center symmetry
 dimension
 leader
 cutting plane
 view plane

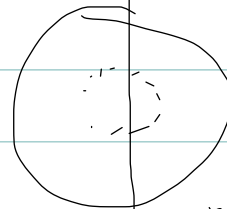
Section Views

dimensioning to hidden lines
is bad

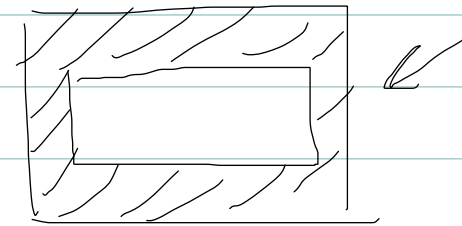


project

C ←

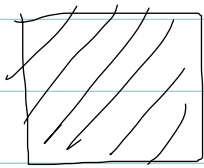


C ←

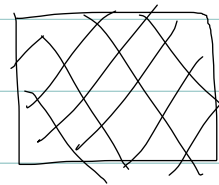


remove C-C
this material

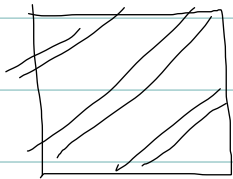
Put info into hatching
what material



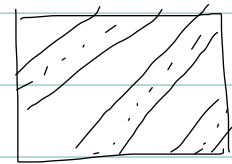
general
cast iron



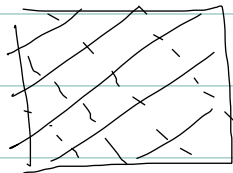
white metal
zinc lead



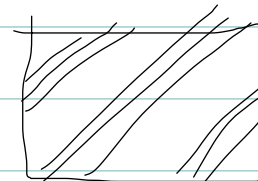
steel



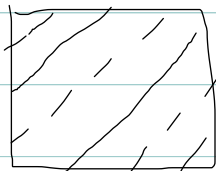
titanium



aluminum
magnesium



rubber
plastic



bronze
brass
copper