Thapar Institute of Engineering & Technology – Patiala

Dr. Vishal Gupta
Assistant Professor
MED-TIET- Patiala

Thapar Institute of Engineering & Technology
(Deemed to be University)
Bhadson Road, Patiala, Punjab, Pin-147004
Contact No. : +91-175-2393201
Email : info@thapar.edu

Contact Details
Cabin H Block, first floor
9729002917
vishal.gupta@thapar.edu
http://www.drvishalgupta.co.in

THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

Mechanics of Machines
UME 306

Module - 1
Lecture - 5

Instructional objective

- Solved Example
- Practice Exercise

Examples

1. Find the DOF of the system as shown in figure:

Sol:

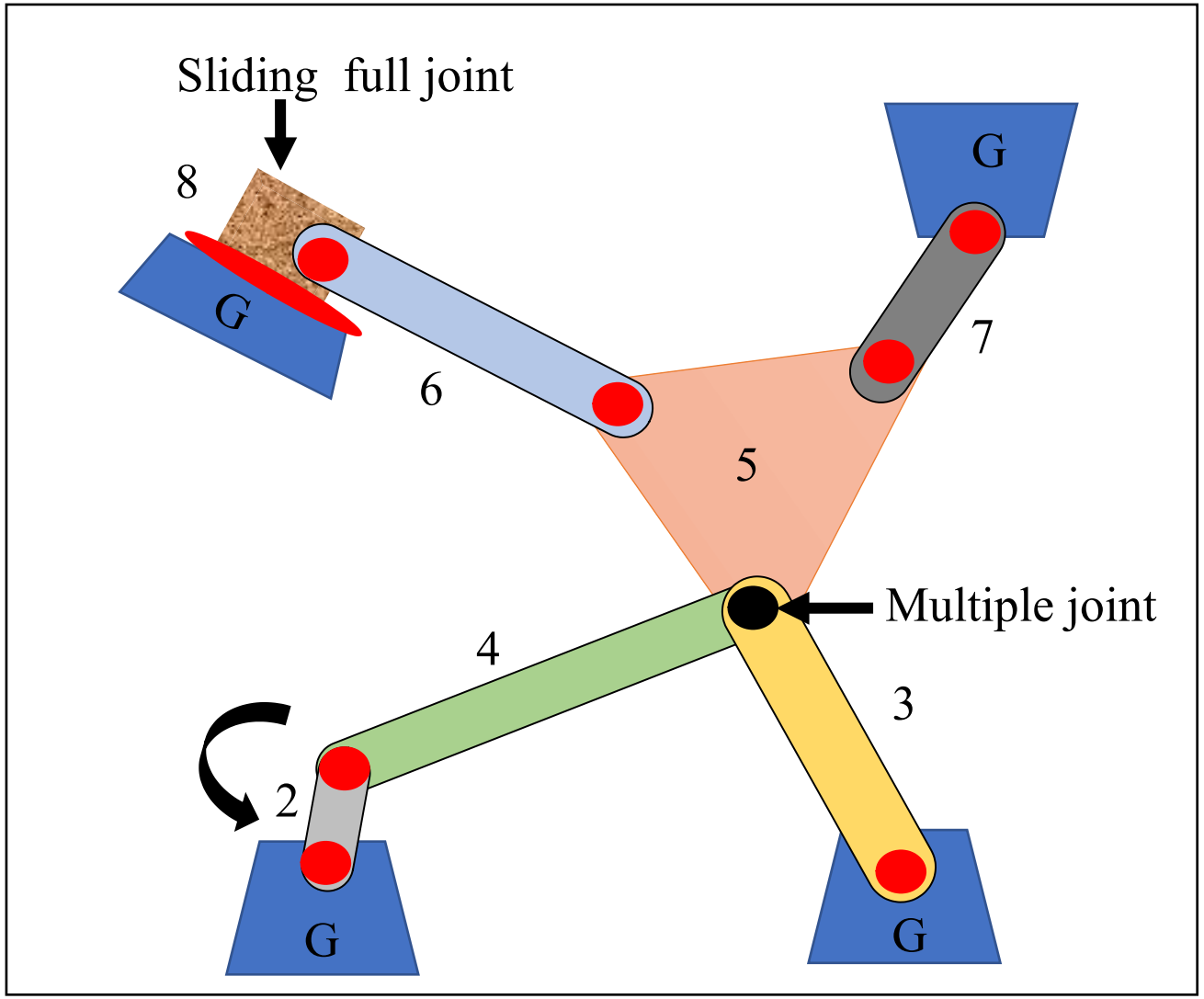
$$M = 3\,(L - 1) - 2\,J - h$$

L = 8

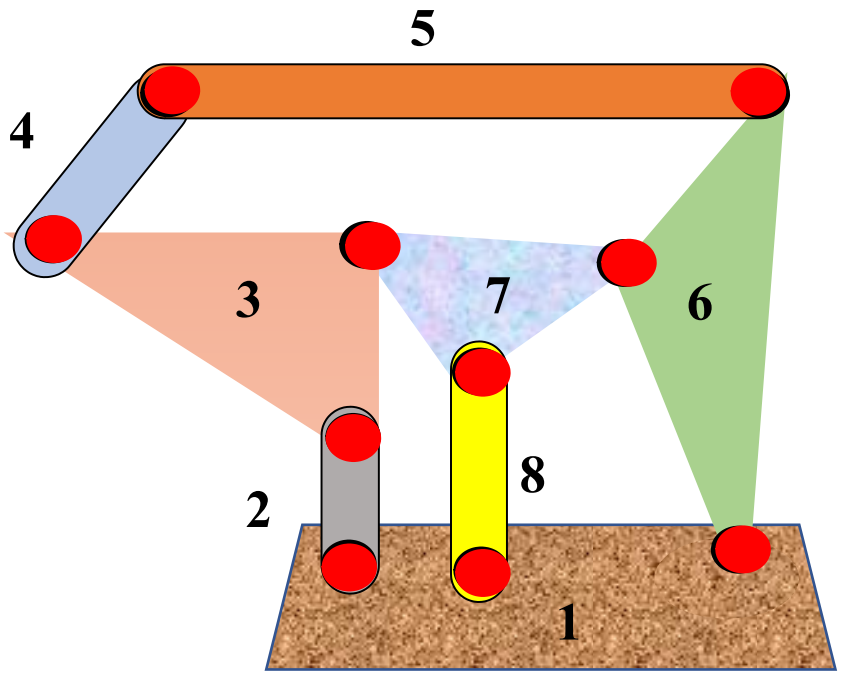
J = 10

h = 0

DOF = 1



2. Find the DOF of the system as shown in figure:



Sol:

$$M = 3\,(L - 1) - 2\,J - h$$

L = 8

J = 10

h = 0

DOF = 1

3. Find the DOF of the system as shown in figure:

Sol:

$$M = 3\,(L - 1) - 2\,J - h$$

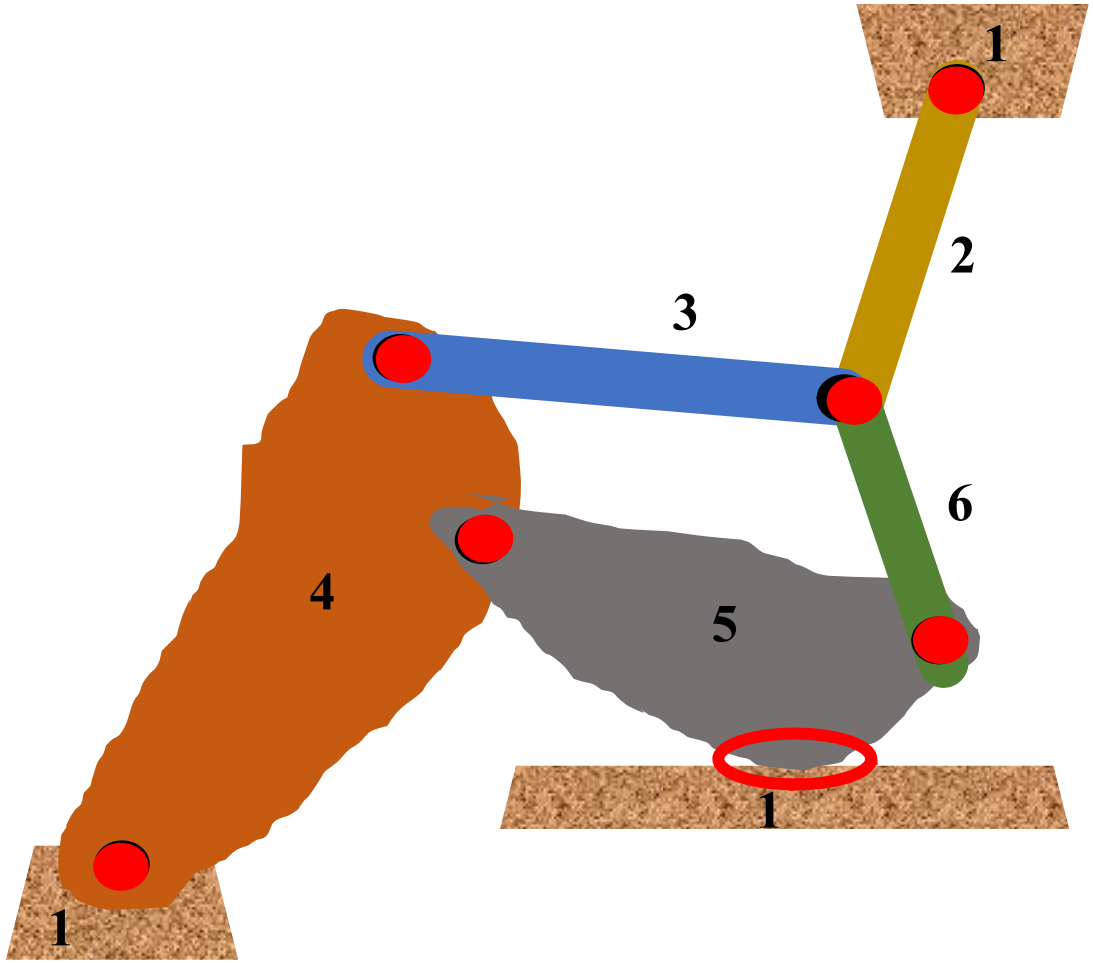
L = 6

J = 7

h = ?

h = 1

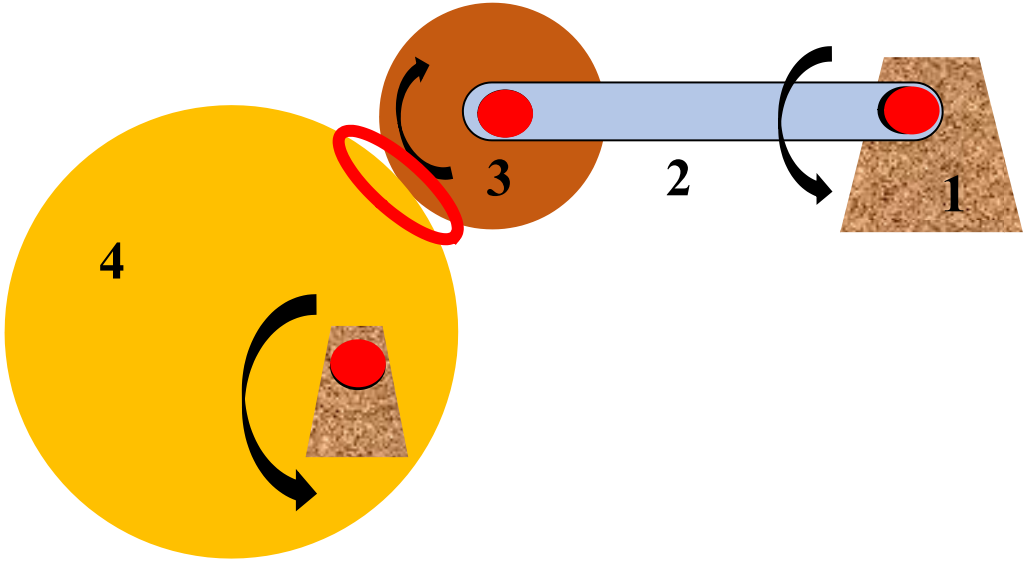
DOF = 0



4. Find the DOF of the system as shown in figure:

Sol:

$$M = 3\,(L - 1) - 2\,J - h$$



L = 4

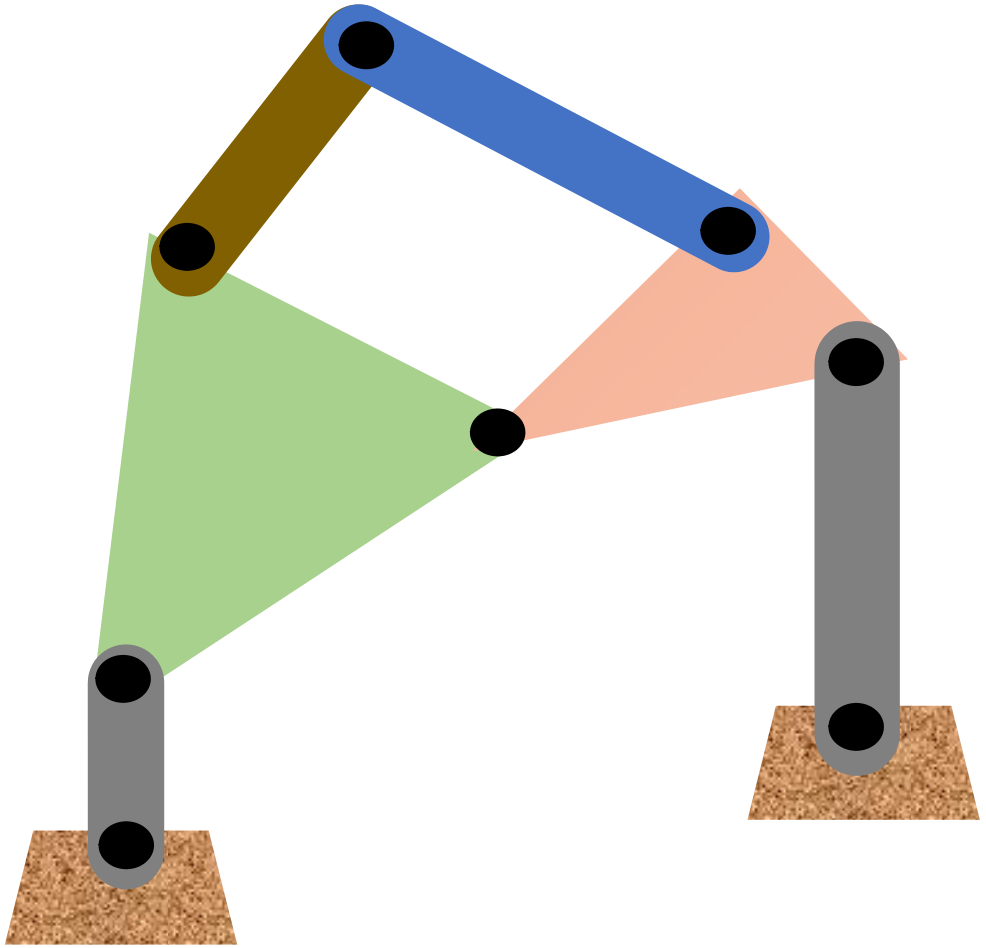
J = 3

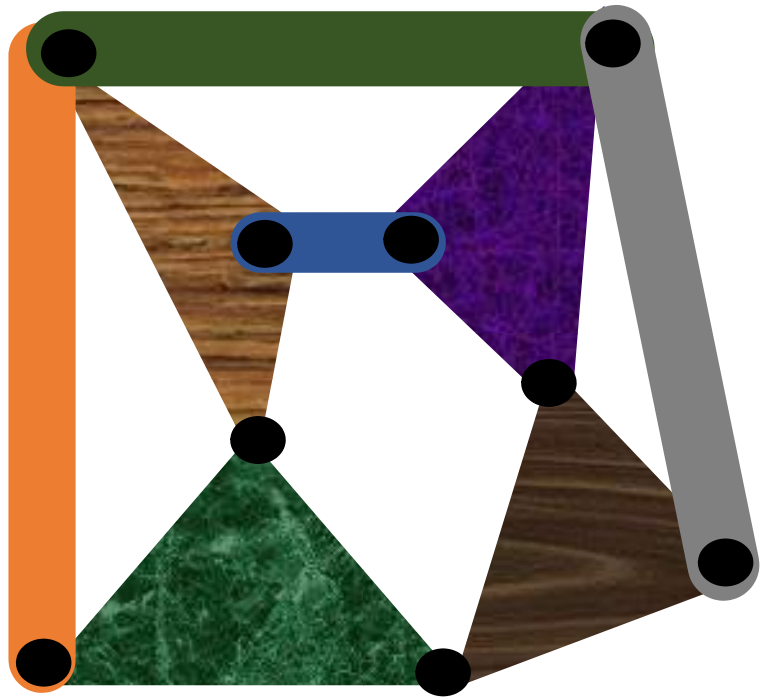
h = 1

DOF = 2

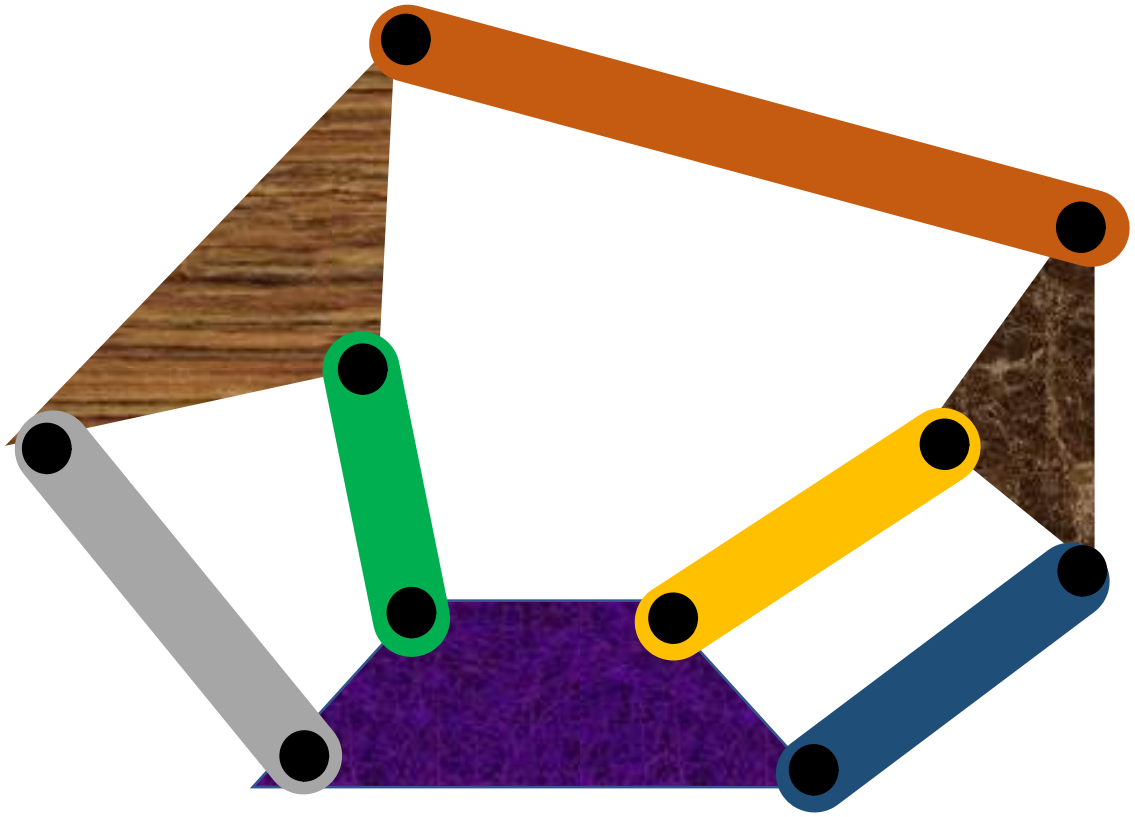
Practice Exercise :

Find the DOF of the system as shown in figures:

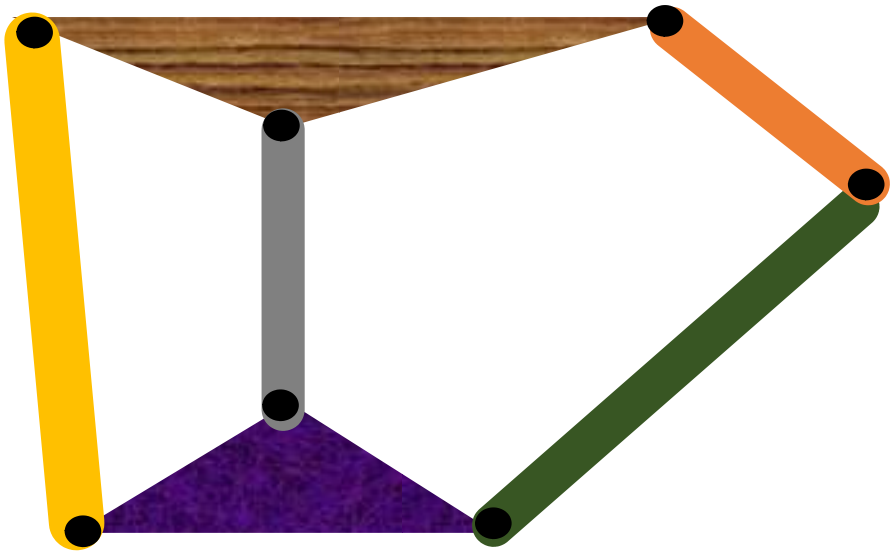




Find the DOF of the system as shown in figures:



8 Bar Mechanism



6 Bar Mechanism

Reference Books

1. *Uicker, John Joseph, Gordon R. Pennock, and Joseph Edward Shigley. Theory of machines and mechanisms. Vol. 1. New York: Oxford University Press.*
2. *Norton, Robert L. Design of machinery: an introduction to the synthesis and analysis of mechanisms and machines. Boston: McGraw-Hill Higher Education.*
3. *Rattan, Sarjit S. Theory of machines. Tata McGraw-Hill Education.*
4. *Vinogradov, Oleg. Fundamentals of kinematics and dynamics of machines and mechanisms. CRC press.*
5. *Simón Mata, Antonio, et al. Fundamentals of machine theory and mechanisms. Springer.*

Thanks for watching this video

Save Electricity Save World