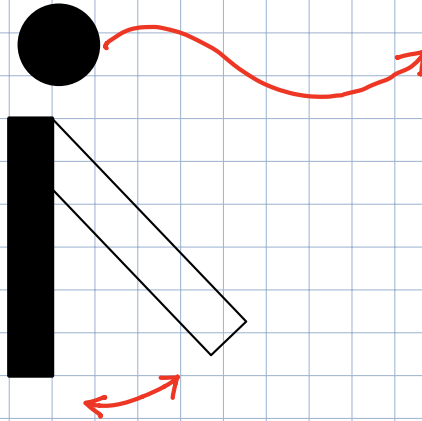


Dynamics : the branch of mechanics which deals with the motion of bodies under the action of forces

Dynamics of Particles 질점

Dynamics of Rigid Bodies 강체



Dynamics of Particles

1. Introduction to Dynamics : Newton's Laws, units, dimensions
2. Kinematics of Particles u? a?
3. Kinetics of Particles E? T?
4. Kinetics of Systems of Particles

• **Kinematics** : describes the motion of bodies without reference to the forces which either cause the motion or are generated as a result of the motion.

• **Kinetics** : the study of the relations between unbalanced forces and the resulting changes in motion.

Dynamics of Rigid Bodies

1. Plane Kinematics of Rigid Bodies
2. Plane Kinetics of Rigid Bodies
3. 3D Dynamics of Rigid Bodies
4. Vibration

Chapter 1. Introduction to Dynamics

• Basic Concepts :

Mass : the quantitative measure of the inertia

↳ the resistance to change in motion of body

Particle : a body of negligible dimensions

Rigid Body : a body whose changes in shape are negligible.

vector, scalar : $\underline{V} = (u, v, w)$

$$= u \underline{i} + v \underline{j} + w \underline{k}$$

vector (pointing to $\underline{V}$)

scalar (pointing to u)

vector (unit vector) (pointing to $\underline{i}$)

• Newton's Laws

1. 관성 법칙 : A particle remains at rest or continues to move
2. 가속도 법칙 : a is proportional to F ($F=ma$)
3. 작용 / 반작용 법칙