

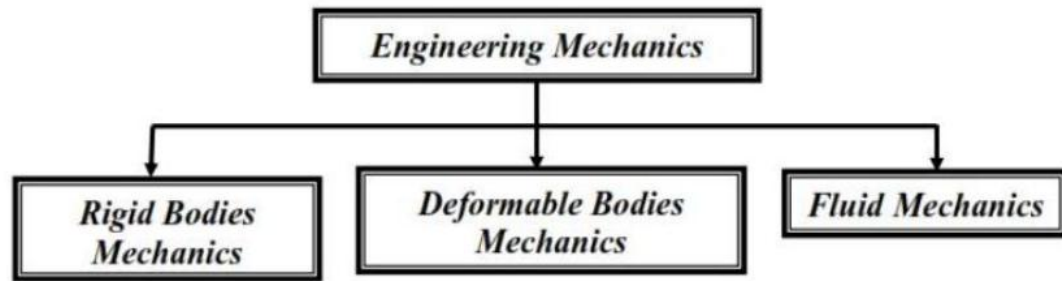


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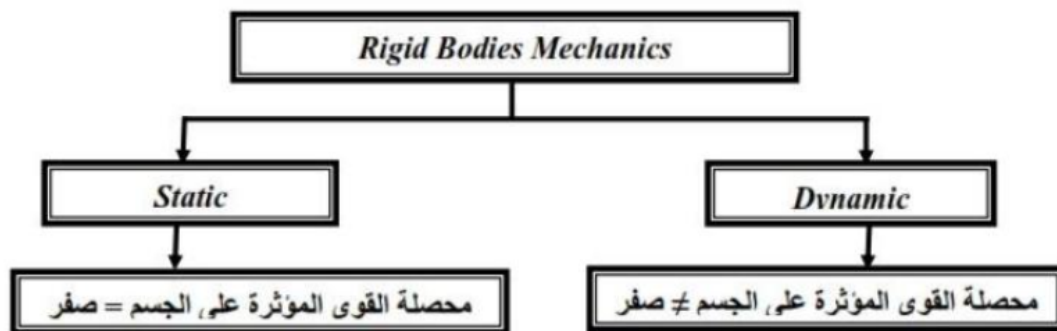
**Mechanics:** is the physical science which study the external effect of forces acting on a rigid body.



### Type of Rigid Bodies

**Statics:** which concerns the equilibrium of bodies under action of forces.

**Dynamics:** which concerns the motion of bodies





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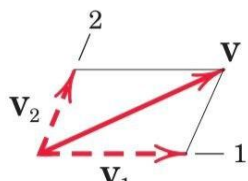
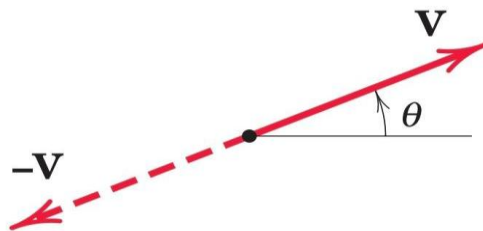


## Scalars and Vectors Quantities:

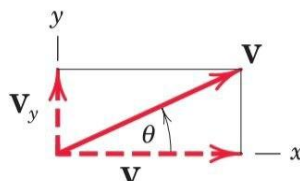
Most of the physical quantities in mechanics can be expressed mathematically by means of scalars and vectors.

**Scalar:** is physical quantity which has only magnitude. For example, mass, volume, time, and length are scalar quantities

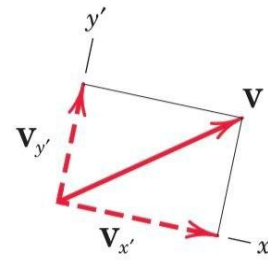
**Vector:** is physical quantity which has both a magnitude and direction such as force, velocity, and displacement.



(a)



(b)



(c)



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QUANTITY	DIMENSIONAL SYMBOL	SI UNITS		U.S. CUSTOMARY UNITS	
		UNIT	SYMBOL	UNIT	SYMBOL
Mass	M	Base units	kilogram	slug	—
Length	L		meter	foot	ft
Time	T		second	second	sec
Force	F		newton	pound	lb

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