

vector analysis

Scalar quantity : only magnitude

e.g. quantities like mass, time, density, temperature, length, volume, speed and work

Vector quantity : magnitude and direction

e.g. displacement, acceleration, weight, force, momentum, electric and magnetic field

① unit vector : $\hat{A} = \frac{V}{|V|}$ ② magnitude, length, norm $|V|$

③ null vector : $AB = 0$ (zero, null vector)

④ Two vectors are said to be negative if they have same magnitude but opposite direction $|BA| = |-AB|$

equal vector $|AB| = |CD|$

if

① $K + ve$ then V and KV have same directions.

② $K - ve$ then V and KV are opposite directions

Law of addition

$AB + BC = AC \Rightarrow U + V = AC$ are called Triangle

Law of parallelogram

$AD = AB + AC$

= magnitude of vector

$$|OP| = |U| = \sqrt{x^2 + y^2}$$