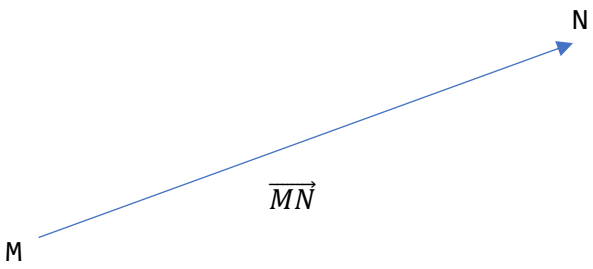
VECTOR BASICS

Definition

Vector

A VECTOR is a quantity which constitutes a set of points and consists of

Direction – a straight line of vector. Line MN is the direction of $\overrightarrow{MN}$	
Sense – expressed by the arrow of vector.	
Magnitude – the length of the vector. The length of MN is the magnitude of $\overrightarrow{MN}$ ($\lvert\overrightarrow{MN}\rvert$).	

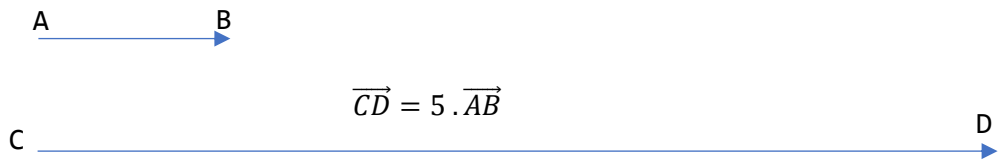
Self-learning: Addition, subtraction, and angle of vectors

Scalar multiplication

$$\vec{B} = k \,.\, \vec{A}$$

When a $\vec{A}$ is multiplied by a scalar k, the result is $\vec{B}$ which has the same direction and sense to $\vec{A}$ and k time(s) id magnitude.

Example: $k = 5, \overrightarrow{\mathrm{CD}}$ and $\overrightarrow{\mathrm{AB}}$



➔
$$\begin{cases} \mathrm{CD} \,//\, \mathrm{AB} \\ \overrightarrow{\mathrm{CD}} \uparrow\uparrow \overrightarrow{\mathrm{AB}} \\ \mathrm{CD} = 5 \,.\, \mathrm{AB} \end{cases}$$

Scalar production

$$\vec{A}.\vec{B} = \vec{B}.\vec{A} = \left|\vec{A}\right|.\left|\vec{B}\right|.\cos(\alpha)$$

With α is the angle between $\vec{A}$ and $\vec{B}$

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