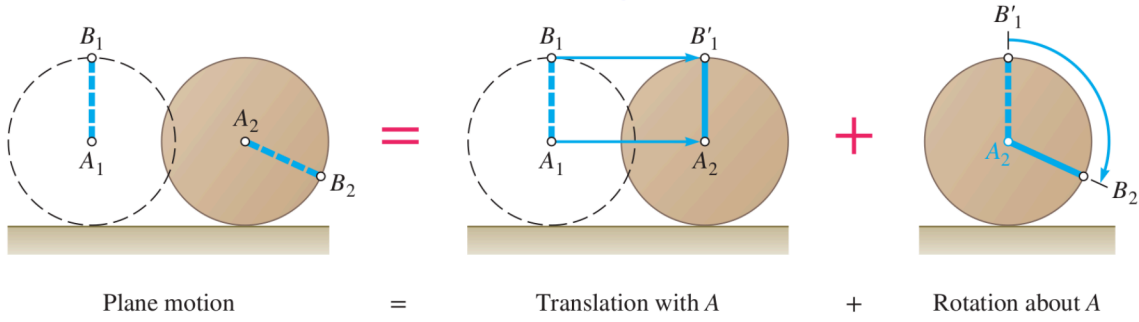


General Plane Motion



$$\begin{aligned}\vec{V}_B &= \vec{V}_A + \vec{V}_{B/A} \\ &= \vec{V}_A + \vec{\omega} \times \vec{r}_{B/A} \\ &= \vec{V}_A + \omega K \times \vec{r}_{B/A}\end{aligned}$$

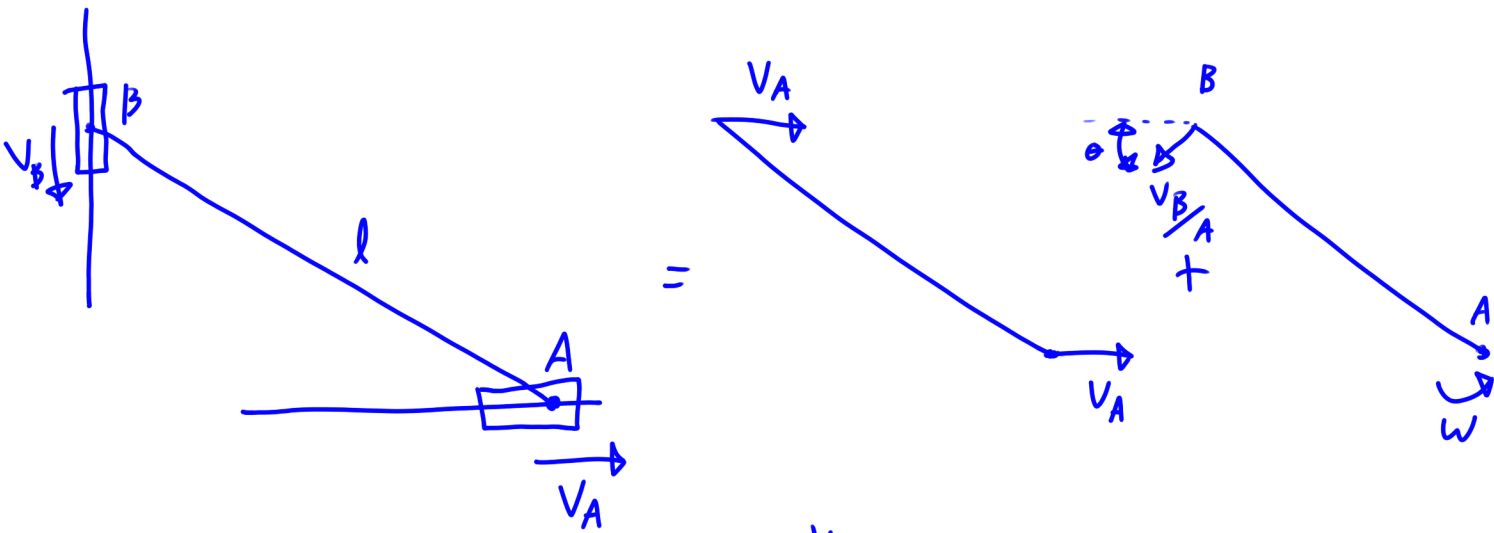
$$\vec{V}_{B/A} = \vec{\omega} \times \vec{r}_{B/A}$$

general/3D

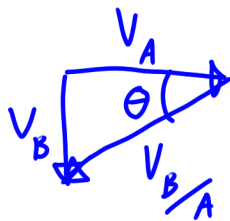
$$\vec{V}_{B/A} = \omega K \times \vec{r}_{B/A}$$

2D/plane motion

$$|\vec{V}_{B/A}| = |\vec{r}_{B/A}| \omega$$



$$\vec{V}_B = \vec{V}_A + \vec{V}_{B/A}$$



$$\omega = \frac{|\vec{V}_{B/A}|}{l} = \frac{|\vec{V}_A|}{l \cos \theta}$$

$$\frac{|\vec{V}_B|}{|\vec{V}_A|} = \tan \theta$$

$$|\vec{V}_{B/A}| = \frac{|\vec{V}_A|}{\cos \theta}$$