

KINEMATIKA

POSISI & PERPINDAHAN

NO. 2





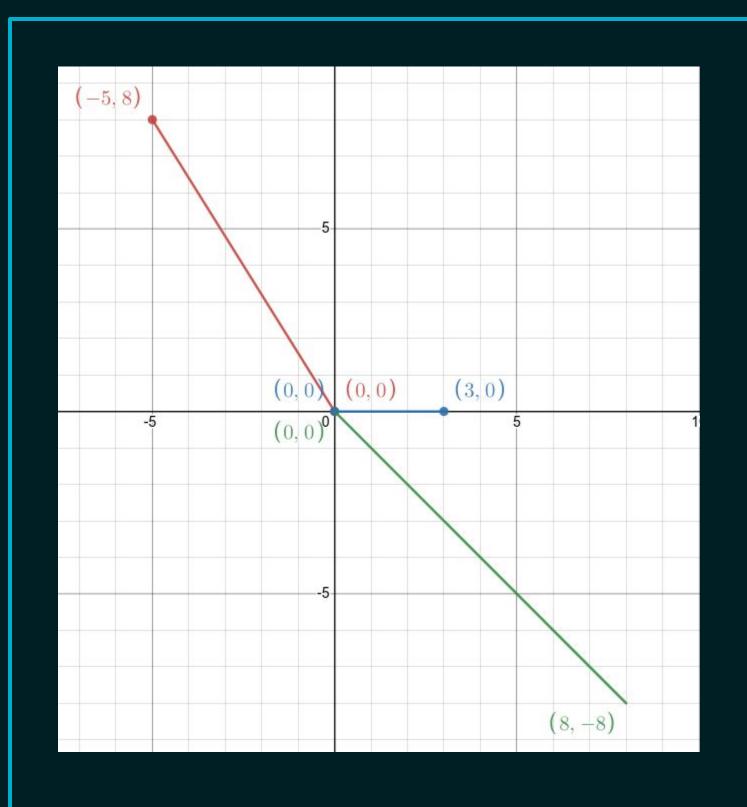
- Diketahui
 - Posisi benda (-5, 8, 0) dalam meter untuk masing-masing sumbu x, y dan z.
- Ditanya
 - Besar dan sudut dari vektor posisi benda tsb.
 - Jika benda berpindah ke posisi (3, 0, 0) m, tentukan besar dan sudutnya
- Solusi

$$egin{aligned} \overrightarrow{r} &= \langle -5, 8, 0
angle \, \mathbf{m} \ \|\overrightarrow{r}\| &= \sqrt{(-5)^2 + (8)^2} \end{aligned} \qquad egin{aligned} \overrightarrow{\Delta r} &= egin{bmatrix} 3 \ 0 \ 0 \end{bmatrix} - egin{bmatrix} -5 \ 8 \ 0 \end{bmatrix} \ \|\overrightarrow{r}\| &= 9.43 \,\, \mathbf{m} \end{aligned} \qquad egin{bmatrix} \overrightarrow{\Delta r} &= egin{bmatrix} 8 \ -8 \ 0 \end{bmatrix} \end{aligned} \qquad egin{bmatrix} \theta &= rctan\left(rac{8}{-5}
ight) \end{aligned} \qquad egin{bmatrix} \overrightarrow{\Delta r} &= egin{bmatrix} 1 \ -5 \ 8 \ 0 \end{bmatrix} \end{aligned} \qquad egin{bmatrix} \overrightarrow{\Delta r} &= egin{bmatrix} 1 \ -5 \ 8 \ 0 \end{bmatrix} \end{aligned}$$
 $\qquad \overrightarrow{\Delta r} = egin{bmatrix} 1 \ -5 \ 8 \ 0 \end{bmatrix}$

$$egin{aligned} ig ig 0 \ igg \| \overrightarrow{\Delta r} ig \| = 11.3 \,\, \mathbf{m} \ & heta = rctan \left(rac{-8}{8}
ight) \ & heta = 135^{\circ} \end{aligned}$$











SUMBER:

Halliday, D., Resnick, R., & Walker, J. (2013). *Fundamentals of physics*. John Wiley & Sons.

