



$$g \hat{=} d_p : \vec{x} = \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix} + t \begin{pmatrix} 3 \\ 3 \\ 0 \end{pmatrix}$$

$$h \hat{=} d_R : \vec{x} = \begin{pmatrix} 0 \\ 3 \\ 0 \end{pmatrix} + s \begin{pmatrix} 3-0 \\ 0-3 \\ 3-0 \end{pmatrix} = \begin{pmatrix} 0 \\ 3 \\ 0 \end{pmatrix} + s \begin{pmatrix} 3 \\ -3 \\ 3 \end{pmatrix}$$

$$\vec{G}_t H_s = \begin{pmatrix} 0 + 3s - (0 + 3t) \\ 3 - 3s - (0 + 3t) \\ 0 + 3s - (0 + 0t) \end{pmatrix} = \begin{pmatrix} 3s - 3t \\ 3 - 3s - 3t \\ 3s \end{pmatrix}$$

$$\vec{G}_t H_s \cdot \begin{pmatrix} 3 \\ 3 \\ 0 \end{pmatrix} = 0 \quad \wedge \quad \vec{G}_t H_s \cdot \begin{pmatrix} 3 \\ -3 \\ 3 \end{pmatrix} = 0$$

$$(3s - 3t) \cdot 3 + (3 - 3s - 3t) \cdot 3 + (3s) \cdot 0 = 0$$

$$(3s - 3t) \cdot 3 + (3 - 3s - 3t) \cdot (-3) + (3s) \cdot 3 = 0$$

$$9s - 9t + 9 - 9s - 9t = 0$$

$$9s - 9t - 9 + 9s + 9t + 9s = 0$$

$$-18t = -9$$

$$27s = 9$$

$$t = \frac{1}{2}$$

$$s = \frac{1}{3}$$

$$\vec{OG}_{0,5} = \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix} + \frac{1}{2} \begin{pmatrix} 3 \\ 3 \\ 0 \end{pmatrix} = \begin{pmatrix} 1,5 \\ 1,5 \\ 0 \end{pmatrix} \Rightarrow G_{0,5} (1,5 \mid 1,5 \mid 0)$$

$$\vec{OH}_{\frac{1}{3}} = \begin{pmatrix} 0 \\ 3 \\ 0 \end{pmatrix} + \frac{1}{3} \begin{pmatrix} 3 \\ -3 \\ 3 \end{pmatrix} = \begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix} \Rightarrow H_{\frac{1}{3}} (1 \mid 2 \mid 1)$$

$$d(g, h) = |\vec{G}_{0,5} H_{\frac{1}{3}}| = \sqrt{(1 - 1,5)^2 + (2 - 1,5)^2 + (1 - 0)^2} = \sqrt{\frac{1}{4} + \frac{1}{4} + 1} = \sqrt{\frac{6}{4}} = \frac{1}{2}\sqrt{6}$$