$$\left.\begin{aligned} \boldsymbol{i}_v &= 0\boldsymbol{i} - 1\boldsymbol{j} + 0\boldsymbol{k} \\ \boldsymbol{j}_v &= 0\boldsymbol{i} + 0\boldsymbol{j} + 1\boldsymbol{k} \\ \boldsymbol{k}_v &= -1\boldsymbol{i} + 0\boldsymbol{j} + 0\boldsymbol{k} \end{aligned}\right\} \rightarrow T_{w-v} = \begin{bmatrix} 0 & -1 & 0 & 0 \\ 0 & 0 & 1 & -1 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \rightarrow T_{w-v} \begin{bmatrix} 5 \\ 0 \\ 1 \\ 1 \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \\ -5 \\ 1 \end{bmatrix}$$

$$\boldsymbol{k}_v = \frac{1}{\sqrt{3}}\boldsymbol{i} + \frac{1}{\sqrt{3}}\boldsymbol{j} + \frac{1}{\sqrt{3}}\boldsymbol{k}$$

$$\boldsymbol{j}_v = \frac{\boldsymbol{u}_p - \left(\boldsymbol{u}_p \cdot \boldsymbol{k}_v\right)\boldsymbol{k}_v}{\left|\boldsymbol{u}_p - \left(\boldsymbol{u}_p \cdot \boldsymbol{k}_v\right)\boldsymbol{k}_v\right|} = \frac{-\frac{1}{3}\boldsymbol{i} - \frac{1}{3}\boldsymbol{j} + \frac{2}{3}\boldsymbol{k}}{\left|-\frac{1}{3}\boldsymbol{i} - \frac{1}{3}\boldsymbol{j} + \frac{2}{3}\boldsymbol{k}\right|} = -\frac{1}{\sqrt{6}}\boldsymbol{i} - \frac{1}{\sqrt{6}}\boldsymbol{j} + \frac{2}{\sqrt{6}}\boldsymbol{k}$$

$$\boldsymbol{i}_v = \boldsymbol{j}_v \times \boldsymbol{k}_v = -\frac{1}{\sqrt{2}}\boldsymbol{i} + \frac{1}{\sqrt{2}}\boldsymbol{j}$$

$$T_{w-v} = \begin{bmatrix} \boldsymbol{i}\cdot\boldsymbol{i}_v & \boldsymbol{j}\cdot\boldsymbol{i}_v & \boldsymbol{k}\cdot\boldsymbol{i}_v & 0 \\ \boldsymbol{i}\cdot\boldsymbol{j}_v & \boldsymbol{j}\cdot\boldsymbol{j}_v & \boldsymbol{k}\cdot\boldsymbol{j}_v & 0 \\ \boldsymbol{i}\cdot\boldsymbol{k}_v & \boldsymbol{j}\cdot\boldsymbol{k}_v & \boldsymbol{k}\cdot\boldsymbol{k}_v & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} = \begin{bmatrix} -\frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} & 0 & 0 \\ -\frac{1}{\sqrt{6}} & -\frac{1}{\sqrt{6}} & \frac{2}{\sqrt{6}} & 0 \\ \frac{1}{\sqrt{3}} & \frac{1}{\sqrt{3}} & \frac{1}{\sqrt{3}} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \rightarrow T_{w-v} \begin{bmatrix} 0 \\ 0 \\ 5 \\ 1 \end{bmatrix} = \begin{bmatrix} 0 \\ \frac{5\sqrt{6}}{3} \\ \frac{5\sqrt{3}}{3} \\ 1 \end{bmatrix} \rightarrow \text{screen coordinate: } \left(0, \frac{5\sqrt{6}}{3}\right)$$