

$$8-) P' = \begin{bmatrix} 1 & 0 & 0 & x_0 \\ 0 & 1 & 0 & y_0 \\ 0 & 0 & 1 & z_0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \times \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 1/d & 0 & 0 & 0 \end{bmatrix} \times \begin{bmatrix} 1 & 0 & 0 & -x_0 \\ 0 & 1 & 0 & -y_0 \\ 0 & 0 & 1 & -z_0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \times \begin{bmatrix} x \\ y \\ z \\ 1 \end{bmatrix}$$

$$P' = \begin{bmatrix} 1 & 0 & 0 & x_0 \\ 0 & 1 & 0 & y_0 \\ 0 & 0 & 1 & z_0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \times \begin{bmatrix} x - x_0 \\ y - y_0 \\ z - z_0 \\ 1 \end{bmatrix}$$

$$P' = \begin{bmatrix} 1 & 0 & 0 & x_0 \\ 0 & 1 & 0 & y_0 \\ 0 & 0 & 1 & z_0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \times \begin{bmatrix} x - x_0 \\ y - y_0 \\ z - z_0 \\ (x - x_0) \div (1/d) \end{bmatrix} = \begin{bmatrix} x - x_0 + x_0(x - x_0)/d \\ y - y_0 + y_0(x - x_0)/d \\ z - z_0 + z_0(x - x_0)/d \\ (x - x_0) \div d \end{bmatrix}$$

$$P' = \begin{bmatrix} x - x_0 + x_0 \cdot w \\ y - y_0 + y_0 \cdot w \\ z - z_0 + z_0 \cdot w \\ w \end{bmatrix} \div w = \begin{bmatrix} (x - x_0)/w + x_0 \\ (y - y_0)/w + y_0 \\ (z - z_0)/w + z_0 \\ 1 \end{bmatrix} \quad w = (x - x_0) = 8 - 2 = 6$$

$$P' = \begin{bmatrix} (8-2)/6 + 2 \\ (4-4)/6 + 4 \\ (10-0)/6 + 0 \\ 1 \end{bmatrix} = \begin{bmatrix} 3 \\ 4 \\ 1.67 \\ 1 \end{bmatrix}$$

$$P'(\overset{x}{3}; \overset{y}{4}; \overset{z}{1.67})$$