We want to verify that

$$Q_y = D_y - C_A(D_y - P_y) + S_A P_z$$

With $(C_A - 1)D_y = C_A D_y - D_y$

We can rewrite the matrix Q as

$$Q = \begin{bmatrix} Q_x \\ Q_y \\ Q_z \\ 1 \end{bmatrix} = \begin{bmatrix} C_B & S_A S_B & -S_B C_A & -S_A S_B D_y \\ 0 & C_A & S_A & C_A D_y - D_y \\ S_B & -S_A C_B & C_A C_B & S_A C_B D_y \\ 0 & 0 & 0 & 1 \end{bmatrix} \cdot \begin{bmatrix} P_x \\ P_y \\ P_z \\ 1 \end{bmatrix}$$

$$Q_y = \begin{bmatrix} 0 & C_A & S_A & C_A D_y - D_y \end{bmatrix} \cdot \begin{bmatrix} P_x \\ P_y \\ P_z \\ 1 \end{bmatrix} = C_A P_y + S_A P_z + C_A D_y - D_y$$

$$Q_y = C_A P_y + C_A D_y - D_y + S_A P_z$$

$$Q_y = C_A(P_y + D_y) - D_y + S_A P_z$$

$$Q_y = -C_A(D_y - P_y) - D_y + S_A P_z$$

$$Q_y = -D_y - C_A(D_y - P_y) + S_A P_z \neq D_y - C_A(D_y - P_y) + S_A P_z$$