(ii)

$$X = X^3 \gamma_3 + X^{123}\,\gamma_{123}$$

$$X' = X^3 \left(\gamma_3 \cos\frac{\alpha+\beta}{2} + \gamma_{123} \sin\frac{\alpha+\beta}{2} \right) + X^{123} \left(-\gamma_2 \sin\frac{\alpha+\beta}{2} + \gamma_{123} \cos\frac{\alpha+\beta}{2} \right)$$

(iii)

$$X = s\,\underline{1} + X^{12}\,\gamma_{12}$$

$$X' = s\left(\underline{1} \cos\frac{\alpha+\beta}{2} + \gamma_{12} \sin\frac{\alpha+\beta}{2} \right) + X^2 \left(-\underline{1} \sin\frac{\alpha+\beta}{2} + \gamma_{12} \cos\frac{\alpha+\beta}{2} \right)$$

(iv)

$$X = \tilde{X}^1\,\gamma_5\gamma_1 + \tilde{X}^2\,\gamma_5\gamma_2$$

$$X' = \tilde{X}^1 \left(\gamma_5\gamma_1 \cos\frac{\alpha-\beta}{2} + \gamma_5\gamma_2 \sin\frac{\alpha-\beta}{2} \right) + \tilde{X}^2 \left(-\gamma_5\gamma_1 \sin\frac{\alpha-\beta}{2} + \gamma_5\gamma_2 \cos\frac{\alpha-\beta}{2} \right)$$

Usual rotations of vectors or pseudovectors are reproduced,
if the angle β for the right transformation is equal to minus angle α
for the left transformation, i.e., if

$$\beta = -\alpha$$

Then all other transformations which mix the grade vanish.