Repressive matrix of functor in GVB-BCCC formula derivation

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There are 312 functors constructed:

$\hat{O}_0 : \langle P_p|\hat{0}^+_\alpha|P_q\rangle =>$

$\hat{0}^+_\alpha|P_0\rangle = r_{0,12,0}P_{12}$

$r_{0,12,0} \ = \ ci_{0,1}$

$\hat{0}^+_\alpha|P_1\rangle = r_{0,12,1}P_{12}$

$r_{0,12,1} \ = \ ci_{1,1}$

$\hat{0}^+_\alpha|P_2\rangle = r_{0,11,2}P_{11}$

$r_{0,11,2} \ = \ ci_{2,3}$

$\hat{0}^+_\alpha|P_3\rangle = r_{0,11,3}P_{11}$

$r_{0,11,3} \ = \ ci_{3,3}$

$\hat{0}^+_\alpha|P_4\rangle =$

$\hat{0}^+_\alpha|P_5\rangle = r_{0,13,5}P_{13}$

$r_{0,13,5} \ = \ 1$

$\hat{0}^+_\alpha|P_6\rangle = r_{0,7,6}P_7$

$r_{0,7,6} \ = \ 1$

$\hat{0}^+_\alpha|P_7\rangle =$

$\hat{0}^+_\alpha|P_8\rangle = r_{0,4,8}P_4$

$r_{0,4,8} \ = \ 1$

$\hat{0}^+_\alpha|P_9\rangle = r_{0,0,9}P_0 + r_{0,1,9}P_1$

$r_{0,0,9} \ = \ inv_{0,0}$

$r_{0,1,9} \ = \ inv_{0,1}$

$\hat{0}^+_\alpha|P_{10}\rangle = r_{0,2,10}P_2 + r_{0,3,10}P_3$

$r_{0,2,10} \ = \ inv_{2,2}$

$r_{0,3,10} \ = \ inv_{2,3}$

$\hat{0}^+_\alpha|P_{11}\rangle =$

$\hat{0}^+_\alpha|P_{12}\rangle =$

$\hat{0}^+_\alpha|P_{13}\rangle =$

$\hat{0}^+_\alpha|P_{14}\rangle = r_{0,15,14}P_{15}$

$r_{0,15,14} \ = \ 1$

$\hat{0}_{\alpha}^{+}|P_{15}\rangle =$

$\hat{O}_1 : \langle P_p|\hat{0}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{-}|P_0\rangle = r_{1,9,0}P_9$

$r_{1,9,0} \ = \ ci_{0,0}$

$\hat{0}_{\alpha}^{-}|P_1\rangle = r_{1,9,1}P_9$

$r_{1,9,1} \ = \ ci_{1,0}$

$\hat{0}_{\alpha}^{-}|P_2\rangle = r_{1,10,2}P_{10}$

$r_{1,10,2} \ = \ ci_{2,2}$

$\hat{0}_{\alpha}^{-}|P_3\rangle = r_{1,10,3}P_{10}$

$r_{1,10,3} \ = \ ci_{3,2}$

$\hat{0}_{\alpha}^{-}|P_4\rangle = r_{1,8,4}P_8$

$r_{1,8,4} \ = \ 1$

$\hat{0}_{\alpha}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{-}|P_7\rangle = r_{1,6,7}P_6$

$r_{1,6,7} \ = \ 1$

$\hat{0}_{\alpha}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{-}|P_{11}\rangle = r_{1,2,11}P_2 + r_{1,3,11}P_3$

$r_{1,2,11} \ = \ inv_{3,2}$

$r_{1,3,11} \ = \ inv_{3,3}$

$\hat{0}_{\alpha}^{-}|P_{12}\rangle = r_{1,0,12}P_0 + r_{1,1,12}P_1$

$r_{1,0,12} \ = \ inv_{1,0}$

$r_{1,1,12} \ = \ inv_{1,1}$

$\hat{0}_{\alpha}^{-}|P_{13}\rangle = r_{1,5,13}P_5$

$r_{1,5,13} \ = \ 1$

$\hat{0}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{-}|P_{15}\rangle = r_{1,14,15}P_{14}$

$r_{1,14,15} \;=\; 1$

$\hat{O}_2 : \langle P_p|\hat{0}_{\beta}^{+}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}|P_0\rangle = r_{2,14,0}P_{14}$

$r_{2,14,0} \;=\; ci_{0,1}$

$\hat{0}_{\beta}^{+}|P_1\rangle = r_{2,14,1}P_{14}$

$r_{2,14,1} \;=\; ci_{1,1}$

$\hat{0}_{\beta}^{+}|P_2\rangle = r_{2,13,2}P_{13}$

$r_{2,13,2} \;=\; -ci_{2,2} * 1$

$\hat{0}_{\beta}^{+}|P_3\rangle = r_{2,13,3}P_{13}$

$r_{2,13,3} \;=\; -ci_{3,2} * 1$

$\hat{0}_{\beta}^{+}|P_4\rangle = r_{2,11,4}P_{11}$

$r_{2,11,4} \;=\; -1.0$

$\hat{0}_{\beta}^{+}|P_5\rangle =$

$\hat{0}_{\beta}^{+}|P_6\rangle = r_{2,9,6}P_9$

$r_{2,9,6} \;=\; 1$

$\hat{0}_{\beta}^{+}|P_7\rangle = r_{2,0,7}P_0 + r_{2,1,7}P_1$

$r_{2,0,7} \;=\; -1.0 * inv_{0,0}$

$r_{2,1,7} \;=\; -1.0 * inv_{0,1}$

$\hat{0}_{\beta}^{+}|P_8\rangle = r_{2,2,8}P_2 + r_{2,3,8}P_3$

$r_{2,2,8} \;=\; inv_{3,2}$

$r_{2,3,8} \;=\; inv_{3,3}$

$\hat{0}_{\beta}^{+}|P_9\rangle =$

$\hat{0}_{\beta}^{+}|P_{10}\rangle = r_{2,5,10}P_5$

$r_{2,5,10} \;=\; 1$

$\hat{0}_{\beta}^{+}|P_{11}\rangle =$

$\hat{0}_{\beta}^{+}|P_{12}\rangle = r_{2,15,12}P_{15}$

$r_{2,15,12} \;=\; -1.0$

$\hat{0}_{\beta}^{+}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}|P_{15}\rangle =$

$\hat{O}_3 : \langle P_p|\hat{0}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\beta}^{-}|P_0\rangle = r_{3,7,0}P_7$

$r_{3,7,0} \ = \ -ci_{0,0} * 1$

$\hat{0}_{\beta}^{-}|P_1\rangle = r_{3,7,1}P_7$

$r_{3,7,1} \ = \ -ci_{1,0} * 1$

$\hat{0}_{\beta}^{-}|P_2\rangle = r_{3,8,2}P_8$

$r_{3,8,2} \ = \ ci_{2,3}$

$\hat{0}_{\beta}^{-}|P_3\rangle = r_{3,8,3}P_8$

$r_{3,8,3} \ = \ ci_{3,3}$

$\hat{0}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\beta}^{-}|P_5\rangle = r_{3,10,5}P_{10}$

$r_{3,10,5} \ = \ 1$

$\hat{0}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{-}|P_9\rangle = r_{3,6,9}P_6$

$r_{3,6,9} \ = \ 1$

$\hat{0}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{-}|P_{11}\rangle = r_{3,4,11}P_4$

$r_{3,4,11} \ = \ -1.0$

$\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{-}|P_{13}\rangle = r_{3,2,13}P_2 + r_{3,3,13}P_3$

$r_{3,2,13} \ = \ -1.0 * inv_{2,2}$

$r_{3,3,13} \ = \ -1.0 * inv_{2,3}$

$\hat{0}_{\beta}^{-}|P_{14}\rangle = r_{3,0,14}P_0 + r_{3,1,14}P_1$

$r_{3,0,14} = inv_{1,0}$

$r_{3,1,14} = inv_{1,1}$

$\hat{0}_{\beta}^{-}|P_{15}\rangle = r_{3,12,15}P_{12}$

$r_{3,12,15} = -1.0$

$\hat{O}_4 : \langle P_p|\hat{1}_{\alpha}^{+}|P_q\rangle =>$

$\hat{1}_{\alpha}^{+}|P_0\rangle = r_{4,11,0}P_{11}$

$r_{4,11,0} = ci_{0,0}$

$\hat{1}_{\alpha}^{+}|P_1\rangle = r_{4,11,1}P_{11}$

$r_{4,11,1} = ci_{1,0}$

$\hat{1}_{\alpha}^{+}|P_2\rangle = r_{4,12,2}P_{12}$

$r_{4,12,2} = -ci_{2,2} * 1$

$\hat{1}_{\alpha}^{+}|P_3\rangle = r_{4,12,3}P_{12}$

$r_{4,12,3} = -ci_{3,2} * 1$

$\hat{1}_{\alpha}^{+}|P_4\rangle =$

$\hat{1}_{\alpha}^{+}|P_5\rangle = r_{4,14,5}P_{14}$

$r_{4,14,5} = -1.0$

$\hat{1}_{\alpha}^{+}|P_6\rangle = r_{4,8,6}P_8$

$r_{4,8,6} = 1$

$\hat{1}_{\alpha}^{+}|P_7\rangle = r_{4,4,7}P_4$

$r_{4,4,7} = -1.0$

$\hat{1}_{\alpha}^{+}|P_8\rangle =$

$\hat{1}_{\alpha}^{+}|P_9\rangle = r_{4,2,9}P_2 + r_{4,3,9}P_3$

$r_{4,2,9} = -1.0 * inv_{3,2}$

$r_{4,3,9} = -1.0 * inv_{3,3}$

$\hat{1}_{\alpha}^{+}|P_{10}\rangle = r_{4,0,10}P_0 + r_{4,1,10}P_1$

$r_{4,0,10} = inv_{1,0}$

$r_{4,1,10} = inv_{1,1}$

$\hat{1}_{\alpha}^{+}|P_{11}\rangle =$

$\hat{1}_{\alpha}^{+}|P_{12}\rangle =$

$\hat{1}_{\alpha}^{+}|P_{13}\rangle = r_{4,15,13}P_{15}$

$r_{4,15,13} \ = \ 1$

$\hat{1}_{\alpha}^{+}|P_{14}\rangle =$

$\hat{1}_{\alpha}^{+}|P_{15}\rangle =$

$\hat{O}_5 : \langle P_p|\hat{1}_{\alpha}^{-}|P_q\rangle =>$

$\hat{1}_{\alpha}^{-}|P_0\rangle = r_{5,10,0}P_{10}$

$r_{5,10,0} \ = \ ci_{0,1}$

$\hat{1}_{\alpha}^{-}|P_1\rangle = r_{5,10,1}P_{10}$

$r_{5,10,1} \ = \ ci_{1,1}$

$\hat{1}_{\alpha}^{-}|P_2\rangle = r_{5,9,2}P_9$

$r_{5,9,2} \ = \ -ci_{2,3} * 1$

$\hat{1}_{\alpha}^{-}|P_3\rangle = r_{5,9,3}P_9$

$r_{5,9,3} \ = \ -ci_{3,3} * 1$

$\hat{1}_{\alpha}^{-}|P_4\rangle = r_{5,7,4}P_7$

$r_{5,7,4} \ = \ -1.0$

$\hat{1}_{\alpha}^{-}|P_5\rangle =$

$\hat{1}_{\alpha}^{-}|P_6\rangle =$

$\hat{1}_{\alpha}^{-}|P_7\rangle =$

$\hat{1}_{\alpha}^{-}|P_8\rangle = r_{5,6,8}P_6$

$r_{5,6,8} \ = \ 1$

$\hat{1}_{\alpha}^{-}|P_9\rangle =$

$\hat{1}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{1}_{\alpha}^{-}|P_{11}\rangle = r_{5,0,11}P_0 + r_{5,1,11}P_1$

$r_{5,0,11} \ = \ inv_{0,0}$

$r_{5,1,11} \ = \ inv_{0,1}$

$\hat{1}_{\alpha}^{-}|P_{12}\rangle = r_{5,2,12}P_2 + r_{5,3,12}P_3$

$r_{5,2,12} \ = \ -1.0 * inv_{2,2}$

$r_{5,3,12} = -1.0 * inv_{2,3}$

$\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{1}_{\alpha}^{-}|P_{14}\rangle = r_{5,5,14}P_5$

$r_{5,5,14} = -1.0$

$\hat{1}_{\alpha}^{-}|P_{15}\rangle = r_{5,13,15}P_{13}$

$r_{5,13,15} = 1$

$\hat{O}_6 : \langle P_p|\hat{1}_{\beta}^{+}|P_q\rangle =>$

$\hat{1}_{\beta}^{+}|P_0\rangle = r_{6,13,0}P_{13}$

$r_{6,13,0} = ci_{0,0}$

$\hat{1}_{\beta}^{+}|P_1\rangle = r_{6,13,1}P_{13}$

$r_{6,13,1} = ci_{1,0}$

$\hat{1}_{\beta}^{+}|P_2\rangle = r_{6,14,2}P_{14}$

$r_{6,14,2} = ci_{2,3}$

$\hat{1}_{\beta}^{+}|P_3\rangle = r_{6,14,3}P_{14}$

$r_{6,14,3} = ci_{3,3}$

$\hat{1}_{\beta}^{+}|P_4\rangle = r_{6,12,4}P_{12}$

$r_{6,12,4} = 1$

$\hat{1}_{\beta}^{+}|P_5\rangle =$

$\hat{1}_{\beta}^{+}|P_6\rangle = r_{6,10,6}P_{10}$

$r_{6,10,6} = 1$

$\hat{1}_{\beta}^{+}|P_7\rangle = r_{6,2,7}P_2 + r_{6,3,7}P_3$

$r_{6,2,7} = -1.0 * inv_{2,2}$

$r_{6,3,7} = -1.0 * inv_{2,3}$

$\hat{1}_{\beta}^{+}|P_8\rangle = r_{6,0,8}P_0 + r_{6,1,8}P_1$

$r_{6,0,8} = -1.0 * inv_{1,0}$

$r_{6,1,8} = -1.0 * inv_{1,1}$

$\hat{1}_{\beta}^{+}|P_9\rangle = r_{6,5,9}P_5$

$r_{6,5,9} = -1.0$

$\hat{1}_{\beta}^{+}|P_{10}\rangle =$

$\hat{1}_{\beta}^{+}|P_{11}\rangle = r_{6,15,11}P_{15}$

$r_{6,15,11} \ = \ -1.0$

$\hat{1}_{\beta}^{+}|P_{12}\rangle =$

$\hat{1}_{\beta}^{+}|P_{13}\rangle =$

$\hat{1}_{\beta}^{+}|P_{14}\rangle =$

$\hat{1}_{\beta}^{+}|P_{15}\rangle =$

$\hat{O}_7 : \langle P_p|\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{1}_{\beta}^{-}|P_0\rangle = r_{7,8,0}P_8$

$r_{7,8,0} \ = \ -ci_{0,1} * 1$

$\hat{1}_{\beta}^{-}|P_1\rangle = r_{7,8,1}P_8$

$r_{7,8,1} \ = \ -ci_{1,1} * 1$

$\hat{1}_{\beta}^{-}|P_2\rangle = r_{7,7,2}P_7$

$r_{7,7,2} \ = \ -ci_{2,2} * 1$

$\hat{1}_{\beta}^{-}|P_3\rangle = r_{7,7,3}P_7$

$r_{7,7,3} \ = \ -ci_{3,2} * 1$

$\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{1}_{\beta}^{-}|P_5\rangle = r_{7,9,5}P_9$

$r_{7,9,5} \ = \ -1.0$

$\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{1}_{\beta}^{-}|P_{10}\rangle = r_{7,6,10}P_6$

$r_{7,6,10} \ = \ 1$

$\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{1}_{\beta}^{-}|P_{12}\rangle = r_{7,4,12}P_4$

$r_{7,4,12} \ = \ 1$

$\hat{1}_{\beta}^{-}|P_{13}\rangle = r_{7,0,13}P_0 + r_{7,1,13}P_1$

$r_{7,0,13} \ = \ inv_{0,0}$

$r_{7,1,13} \ = \ inv_{0,1}$

$\hat{1}_{\beta}^{-}|P_{14}\rangle = r_{7,2,14}P_2 + r_{7,3,14}P_3$

$r_{7,2,14} \ = \ inv_{3,2}$

$r_{7,3,14} \ = \ inv_{3,3}$

$\hat{1}_{\beta}^{-}|P_{15}\rangle = r_{7,11,15}P_{11}$

$r_{7,11,15} \ = \ -1.0$

$\hat{O}_8 : \langle P_p|\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_0\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_1\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_2\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_3\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_5\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_{15}\rangle =$

$\hat{O}_9 : \langle P_p|\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_0\rangle = r_{9,0,0}P_0 + r_{9,1,0}P_1$

$r_{9,0,0} = ci_{0,0} * inv_{0,0}$

$r_{9,1,0} = ci_{0,0} * inv_{0,1}$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_1\rangle = r_{9,0,1} P_0 + r_{9,1,1} P_1$

$r_{9,0,1} = ci_{1,0} * inv_{0,0}$

$r_{9,1,1} = ci_{1,0} * inv_{0,1}$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_2\rangle = r_{9,2,2} P_2 + r_{9,3,2} P_3$

$r_{9,2,2} = ci_{2,2} * inv_{2,2}$

$r_{9,3,2} = ci_{2,2} * inv_{2,3}$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_3\rangle = r_{9,2,3} P_2 + r_{9,3,3} P_3$

$r_{9,2,3} = ci_{3,2} * inv_{2,2}$

$r_{9,3,3} = ci_{3,2} * inv_{2,3}$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_4\rangle = r_{9,4,4} P_4$

$r_{9,4,4} = 1$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_5\rangle =$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_6\rangle =$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_7\rangle = r_{9,7,7} P_7$

$r_{9,7,7} = 1$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_8\rangle =$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_9\rangle =$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_{11}\rangle = r_{9,11,11} P_{11}$

$r_{9,11,11} = 1$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_{12}\rangle = r_{9,12,12} P_{12}$

$r_{9,12,12} = 1$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_{13}\rangle = r_{9,13,13} P_{13}$

$r_{9,13,13} = 1$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\alpha^+ \hat{0}_\alpha^- |P_{15}\rangle = r_{9,15,15} P_{15}$

$r_{9,15,15} = 1$

$\hat{O}_{10} : \langle P_p|\hat{0}^-_\alpha\hat{0}^-_\alpha|P_q\rangle =>$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_0\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_1\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_2\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_3\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_4\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_5\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_6\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_7\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_8\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_9\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_{10}\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_{11}\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_{12}\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_{13}\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_{14}\rangle =$

$\hat{0}^-_\alpha\hat{0}^-_\alpha|P_{15}\rangle =$

$\hat{O}_{11} : \langle P_p|\hat{0}^+_\alpha\hat{0}^+_\beta|P_q\rangle =>$

$\hat{0}^+_\alpha\hat{0}^+_\beta|P_0\rangle = r_{11,15,0}P_{15}$

$r_{11,15,0} \;=\; ci_{0,1}$

$\hat{0}^+_\alpha\hat{0}^+_\beta|P_1\rangle = r_{11,15,1}P_{15}$

$r_{11,15,1} \;=\; ci_{1,1}$

$\hat{0}^+_\alpha\hat{0}^+_\beta|P_2\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta|P_3\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta|P_4\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta|P_5\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta|P_6\rangle = r_{11,0,6}P_0 + r_{11,1,6}P_1$

$r_{11,0,6} = inv_{0,0}$

$r_{11,1,6} = inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta |P_8\rangle = r_{11,11,8} P_{11}$

$r_{11,11,8} = 1$

$\hat{0}^+_\alpha \hat{0}^+_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta |P_{10}\rangle = r_{11,13,10} P_{13}$

$r_{11,13,10} = 1$

$\hat{0}^+_\alpha \hat{0}^+_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta |P_{15}\rangle =$

$\hat{O}_{12} : \langle P_p | \hat{0}^+_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_2\rangle = r_{12,4,2} P_4$

$r_{12,4,2} = ci_{2,3}$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_3\rangle = r_{12,4,3} P_4$

$r_{12,4,3} = ci_{3,3}$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_5\rangle = r_{12,2,5} P_2 + r_{12,3,5} P_3$

$r_{12,2,5} = inv_{2,2}$

$r_{12,3,5} = inv_{2,3}$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_9\rangle = r_{12,7,9} P_7$

$r_{12,7,9} = 1$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_{14}\rangle = r_{12,12,14} P_{12}$

$r_{12,12,14} = 1$

$\hat{0}^+_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{13} : \langle P_p | \hat{0}^-_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{13,6,0} P_6$

$r_{13,6,0} = -ci_{0,0} * 1$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_1\rangle = r_{13,6,1} P_6$

$r_{13,6,1} = -ci_{1,0} * 1$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle = r_{13,8,11} P_8$

$r_{13,8,11} = -1.0$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle = r_{13,10,13} P_{10}$

$r_{13,10,13} = -1.0$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{0}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle = r_{13,0,15} P_0 + r_{13,1,15} P_1$

$r_{13,0,15} \;=\; -1.0 * inv_{1,0}$

$r_{13,1,15} \;=\; -1.0 * inv_{1,1}$

$\hat{O}_{14} : \langle P_p | \hat{0}^+_\alpha \hat{1}^+_\alpha | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_0\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_1\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_2\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_3\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_4\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_5\rangle = r_{14,15,5} P_{15}$

$r_{14,15,5} \;=\; -1.0$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_6\rangle = r_{14,4,6} P_4$

$r_{14,4,6} \;=\; 1$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_9\rangle = r_{14,11,9} P_{11}$

$r_{14,11,9} \;=\; -1.0$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_{10}\rangle = r_{14,12,10} P_{12}$

$r_{14,12,10} \;=\; 1$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha |P_{15}\rangle =$

$\hat{O}_{15} : \langle P_p | \hat{0}^+_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_0\rangle = r_{15,2,0} P_2 + r_{15,3,0} P_3$

$r_{15,2,0} \;=\; ci_{0,1} * inv_{2,2}$

$r_{15,3,0} = ci_{0,1} * inv_{2,3}$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_1\rangle = r_{15,2,1} P_2 + r_{15,3,1} P_3$

$r_{15,2,1} = ci_{1,1} * inv_{2,2}$

$r_{15,3,1} = ci_{1,1} * inv_{2,3}$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_2\rangle = r_{15,0,2} P_0 + r_{15,1,2} P_1$

$r_{15,0,2} = -ci_{2,3} * inv_{0,0}$

$r_{15,1,2} = -ci_{2,3} * inv_{0,1}$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_3\rangle = r_{15,0,3} P_0 + r_{15,1,3} P_1$

$r_{15,0,3} = -ci_{3,3} * inv_{0,0}$

$r_{15,1,3} = -ci_{3,3} * inv_{0,1}$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_8\rangle = r_{15,7,8} P_7$

$r_{15,7,8} = 1$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_{14}\rangle = r_{15,13,14} P_{13}$

$r_{15,13,14} = -1.0$

$\hat{0}^+_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{16} : \langle P_p | \hat{0}^-_\alpha \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_3\rangle =$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_4\rangle = r_{16,6,4} P_6$

$r_{16,6,4} \ = \ -1.0$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_5\rangle =$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_6\rangle =$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_7\rangle =$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_8\rangle =$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_9\rangle =$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_{11}\rangle = r_{16,9,11} P_9$

$r_{16,9,11} \ = \ 1$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_{12}\rangle = r_{16,10,12} P_{10}$

$r_{16,10,12} \ = \ -1.0$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_{13}\rangle =$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\alpha^- \hat{1}_\alpha^- |P_{15}\rangle = r_{16,5,15} P_5$

$r_{16,5,15} \ = \ 1$

$\hat{O}_{17} : \langle P_p | \hat{0}_\alpha^+ \hat{1}_\beta^+ | P_q \rangle =>$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ |P_0\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ |P_1\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ |P_2\rangle = r_{17,15,2} P_{15}$

$r_{17,15,2} \ = \ ci_{2,3}$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ |P_3\rangle = r_{17,15,3} P_{15}$

$r_{17,15,3} \ = \ ci_{3,3}$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ |P_4\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ |P_5\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ |P_6\rangle = r_{17,2,6} P_2 + r_{17,3,6} P_3$

$r_{17,2,6} \ = \ inv_{2,2}$

$r_{17,3,6} = inv_{2,3}$

$\hat{0}^+_\alpha \hat{1}^+_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta |P_8\rangle = r_{17,12,8} P_{12}$

$r_{17,12,8} = -1.0$

$\hat{0}^+_\alpha \hat{1}^+_\beta |P_9\rangle = r_{17,13,9} P_{13}$

$r_{17,13,9} = -1.0$

$\hat{0}^+_\alpha \hat{1}^+_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta |P_{15}\rangle =$

$\hat{O}_{18} : \langle P_p | \hat{0}^+_\alpha \hat{1}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_0\rangle = r_{18,4,0} P_4$

$r_{18,4,0} = -ci_{0,1} * 1$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_1\rangle = r_{18,4,1} P_4$

$r_{18,4,1} = -ci_{1,1} * 1$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_5\rangle = r_{18,0,5} P_0 + r_{18,1,5} P_1$

$r_{18,0,5} = -1.0 * inv_{0,0}$

$r_{18,1,5} = -1.0 * inv_{0,1}$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta |P_{10}\rangle = r_{18,7,10} P_7$

$r_{18,7,10} = 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{14}\rangle = r_{18,11,14}P_{11}$

$r_{18,11,14} = 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{19} : \langle P_p|\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_0\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_1\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_2\rangle = r_{19,6,2}P_6$

$r_{19,6,2} = -ci_{2,2} * 1$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_3\rangle = r_{19,6,3}P_6$

$r_{19,6,3} = -ci_{3,2} * 1$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{12}\rangle = r_{19,8,12}P_8$

$r_{19,8,12} = 1$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{13}\rangle = r_{19,9,13}P_9$

$r_{19,9,13} = 1$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{15}\rangle = r_{19,2,15}P_2 + r_{19,3,15}P_3$

$r_{19,2,15} = -1.0 * inv_{3,2}$

$r_{19,3,15} = -1.0 * inv_{3,3}$

$\hat{O}_{20} : \langle P_p|\hat{0}^+_\beta\hat{0}^+_\alpha|P_q\rangle =>$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_0\rangle = r_{20,15,0}P_{15}$

$r_{20,15,0} = -ci_{0,1} * 1$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_1\rangle = r_{20,15,1}P_{15}$

$r_{20,15,1} = -ci_{1,1} * 1$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_2\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_3\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_4\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_5\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_6\rangle = r_{20,0,6}P_0 + r_{20,1,6}P_1$

$r_{20,0,6} = -1.0 * inv_{0,0}$

$r_{20,1,6} = -1.0 * inv_{0,1}$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_7\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_8\rangle = r_{20,11,8}P_{11}$

$r_{20,11,8} = -1.0$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_9\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_{10}\rangle = r_{20,13,10}P_{13}$

$r_{20,13,10} = -1.0$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_{11}\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_{12}\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_{13}\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_{14}\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha|P_{15}\rangle =$

$\hat{O}_{21} : \langle P_p|\hat{0}^+_\beta\hat{0}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\beta\hat{0}^-_\alpha|P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_2\rangle = r_{21,5,2} P_5$

$r_{21,5,2} \ = \ ci_{2,2}$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_3\rangle = r_{21,5,3} P_5$

$r_{21,5,3} \ = \ ci_{3,2}$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_4\rangle = r_{21,2,4} P_2 + r_{21,3,4} P_3$

$r_{21,2,4} \ = \ inv_{3,2}$

$r_{21,3,4} \ = \ inv_{3,3}$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_7\rangle = r_{21,9,7} P_9$

$r_{21,9,7} \ = \ 1$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_{12}\rangle = r_{21,14,12} P_{14}$

$r_{21,14,12} \ = \ 1$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{22} : \langle P_p | \hat{0}^-_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{0}^-_\beta \hat{0}^-_\alpha |P_0\rangle = r_{22,6,0} P_6$

$r_{22,6,0} \ = \ ci_{0,0}$

$\hat{0}^-_\beta \hat{0}^-_\alpha |P_1\rangle = r_{22,6,1} P_6$

$r_{22,6,1} \ = \ ci_{1,0}$

$\hat{0}^-_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_4\rangle =$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_5\rangle =$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_6\rangle =$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_7\rangle =$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{11}\rangle = r_{22,8,11}P_8$

$r_{22,8,11} \ = \ 1$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{13}\rangle = r_{22,10,13}P_{10}$

$r_{22,10,13} \ = \ 1$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{15}\rangle = r_{22,0,15}P_0 + r_{22,1,15}P_1$

$r_{22,0,15} \ = \ inv_{1,0}$

$r_{22,1,15} \ = \ inv_{1,1}$

$\hat{O}_{23} : \langle P_p|\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_0\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_1\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_2\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_3\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_4\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_5\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_6\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_7\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_8\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_9\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}|P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta |P_{15}\rangle =$

$\hat{O}_{24} : \langle P_p | \hat{0}^+_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_0\rangle = r_{24,0,0} P_0 + r_{24,1,0} P_1$

$r_{24,0,0} \ = \ ci_{0,0} * inv_{0,0}$

$r_{24,1,0} \ = \ ci_{0,0} * inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_1\rangle = r_{24,0,1} P_0 + r_{24,1,1} P_1$

$r_{24,0,1} \ = \ ci_{1,0} * inv_{0,0}$

$r_{24,1,1} \ = \ ci_{1,0} * inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_2\rangle = r_{24,2,2} P_2 + r_{24,3,2} P_3$

$r_{24,2,2} \ = \ ci_{2,3} * inv_{3,2}$

$r_{24,3,2} \ = \ ci_{2,3} * inv_{3,3}$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_3\rangle = r_{24,2,3} P_2 + r_{24,3,3} P_3$

$r_{24,2,3} \ = \ ci_{3,3} * inv_{3,2}$

$r_{24,3,3} \ = \ ci_{3,3} * inv_{3,3}$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_5\rangle = r_{24,5,5} P_5$

$r_{24,5,5} \ = \ 1$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_9\rangle = r_{24,9,9} P_9$

$r_{24,9,9} \ = \ 1$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_{11}\rangle = r_{24,11,11} P_{11}$

$r_{24,11,11} = 1.0$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_{13}\rangle = r_{24,13,13} P_{13}$

$r_{24,13,13} = 1.0$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_{14}\rangle = r_{24,14,14} P_{14}$

$r_{24,14,14} = 1$

$\hat{0}^+_\beta \hat{0}^-_\beta |P_{15}\rangle = r_{24,15,15} P_{15}$

$r_{24,15,15} = 1.0$

$\hat{O}_{25} : \langle P_p | \hat{0}^-_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{0}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{26} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\alpha |P_0\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_1\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_2\rangle = r_{26,15,2} P_{15}$

$r_{26,15,2} \ = \ ci_{2,2}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_3\rangle = r_{26,15,3} P_{15}$

$r_{26,15,3} \ = \ ci_{3,2}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_4\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_5\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_6\rangle = r_{26,2,6} P_2 + r_{26,3,6} P_3$

$r_{26,2,6} \ = \ inv_{3,2}$

$r_{26,3,6} \ = \ inv_{3,3}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_7\rangle = r_{26,11,7} P_{11}$

$r_{26,11,7} \ = \ 1$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_8\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_9\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_{10}\rangle = r_{26,14,10} P_{14}$

$r_{26,14,10} \ = \ 1$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_{11}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_{12}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_{13}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_{14}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ |P_{15}\rangle =$

$\hat{O}_{27} : \langle P_p | \hat{0}_\beta^+ \hat{1}_\alpha^- | P_q \rangle =>$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_0\rangle = r_{27,5,0} P_5$

$r_{27,5,0} \ = \ ci_{0,1}$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_1\rangle = r_{27,5,1} P_5$

$r_{27,5,1} \ = \ ci_{1,1}$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_2\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_3\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_4\rangle = r_{27,0,4} P_0 + r_{27,1,4} P_1$

$r_{27,0,4} \ = \ inv_{0,0}$

$r_{27,1,4} \ = \ inv_{0,1}$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_5\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_6\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_7\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_8\rangle = r_{27,9,8} P_9$

$r_{27,9,8} \ = \ 1$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_9\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_{11}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_{12}\rangle = r_{27,13,12} P_{13}$

$r_{27,13,12} \ = \ 1.0$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_{13}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- |P_{15}\rangle =$

$\hat{O}_{28} : \langle P_p | \hat{0}_\beta^- \hat{1}_\alpha^- |P_q\rangle =>$

$\hat{0}_\beta^- \hat{1}_\alpha^- |P_0\rangle =$

$\hat{0}_\beta^- \hat{1}_\alpha^- |P_1\rangle =$

$\hat{0}_\beta^- \hat{1}_\alpha^- |P_2\rangle = r_{28,6,2} P_6$

$r_{28,6,2} \ = \ -ci_{2,3} * 1$

$\hat{0}_\beta^- \hat{1}_\alpha^- |P_3\rangle = r_{28,6,3} P_6$

$r_{28,6,3} \ = \ -ci_{3,3} * 1$

$\hat{0}_\beta^- \hat{1}_\alpha^- |P_4\rangle =$

$\hat{0}_\beta^- \hat{1}_\alpha^- |P_5\rangle =$

$\hat{0}_\beta^- \hat{1}_\alpha^- |P_6\rangle =$

$\hat{0}_\beta^- \hat{1}_\alpha^- |P_7\rangle =$

$\hat{0}_\beta^- \hat{1}_\alpha^- |P_8\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{11}\rangle = r_{28,7,11}P_7$

$r_{28,7,11} \ = \ -1.0$

$\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{14}\rangle = r_{28,10,14}P_{10}$

$r_{28,10,14} \ = \ -1.0$

$\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{15}\rangle = r_{28,2,15}P_2 + r_{28,3,15}P_3$

$r_{28,2,15} \ = \ -1.0 * inv_{2,2}$

$r_{28,3,15} \ = \ -1.0 * inv_{2,3}$

$\hat{O}_{29} : \langle P_p|\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_0\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_1\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_2\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_3\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_4\rangle = r_{29,15,4}P_{15}$

$r_{29,15,4} \ = \ -1.0$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_5\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_6\rangle = r_{29,5,6}P_5$

$r_{29,5,6} \ = \ 1$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_7\rangle = r_{29,13,7}P_{13}$

$r_{29,13,7} \ = \ 1$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_8\rangle = r_{29,14,8}P_{14}$

$r_{29,14,8} \ = \ -1.0$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_9\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_{10}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta |P_{15}\rangle =$

$\hat{O}_{30} : \langle P_p | \hat{0}^+_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_0\rangle = r_{30,2,0} P_2 + r_{30,3,0} P_3$

$r_{30,2,0} \;=\; -ci_{0,1} * inv_{3,2}$

$r_{30,3,0} \;=\; -ci_{0,1} * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_1\rangle = r_{30,2,1} P_2 + r_{30,3,1} P_3$

$r_{30,2,1} \;=\; -ci_{1,1} * inv_{3,2}$

$r_{30,3,1} \;=\; -ci_{1,1} * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_2\rangle = r_{30,0,2} P_0 + r_{30,1,2} P_1$

$r_{30,0,2} \;=\; ci_{2,2} * inv_{0,0}$

$r_{30,1,2} \;=\; ci_{2,2} * inv_{0,1}$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_3\rangle = r_{30,0,3} P_0 + r_{30,1,3} P_1$

$r_{30,0,3} \;=\; ci_{3,2} * inv_{0,0}$

$r_{30,1,3} \;=\; ci_{3,2} * inv_{0,1}$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_{10}\rangle = r_{30,9,10} P_9$

$r_{30,9,10} \;=\; 1$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta |P_{12}\rangle = r_{30,11,12} P_{11}$

$r_{30,11,12} \;=\; -1.0$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{31} : \langle P_p|\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_0\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_1\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_2\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_3\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_5\rangle = r_{31,6,5}P_6$

$r_{31,6,5} \ = \ -1.0$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{13}\rangle = r_{31,7,13}P_7$

$r_{31,7,13} \ = \ -1.0$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{14}\rangle = r_{31,8,14}P_8$

$r_{31,8,14} \ = \ 1$

$\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{15}\rangle = r_{31,4,15}P_4$

$r_{31,4,15} \ = \ 1$

$\hat{O}_{32} : \langle P_p|\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_q\rangle =>$

$\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_0\rangle =$

$\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{+}|P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_5\rangle = r_{32,15,5} P_{15}$

$r_{32,15,5} \ = \ 1$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_6\rangle = r_{32,4,6} P_4$

$r_{32,4,6} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_9\rangle = r_{32,11,9} P_{11}$

$r_{32,11,9} \ = \ 1$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_{10}\rangle = r_{32,12,10} P_{12}$

$r_{32,12,10} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha |P_{15}\rangle =$

$\hat{O}_{33} : \langle P_p | \hat{1}^+_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_0\rangle = r_{33,2,0} P_2 + r_{33,3,0} P_3$

$r_{33,2,0} \ = \ -ci_{0,0} * inv_{3,2}$

$r_{33,3,0} \ = \ -ci_{0,0} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_1\rangle = r_{33,2,1} P_2 + r_{33,3,1} P_3$

$r_{33,2,1} \ = \ -ci_{1,0} * inv_{3,2}$

$r_{33,3,1} \ = \ -ci_{1,0} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_2\rangle = r_{33,0,2} P_0 + r_{33,1,2} P_1$

$r_{33,0,2} \ = \ ci_{2,2} * inv_{1,0}$

$r_{33,1,2} \ = \ ci_{2,2} * inv_{1,1}$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_3\rangle = r_{33,0,3} P_0 + r_{33,1,3} P_1$

$r_{33,0,3} \ = \ ci_{3,2} * inv_{1,0}$

$r_{33,1,3} \ = \ ci_{3,2} * inv_{1,1}$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_7\rangle = r_{33,8,7} P_8$

$r_{33,8,7} \ = \ 1$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_{13}\rangle = r_{33,14,13} P_{14}$

$r_{33,14,13} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{34} : \langle P_p | \hat{1}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_4\rangle = r_{34,6,4} P_6$

$r_{34,6,4} \ = \ 1$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle = r_{34,9,11} P_9$

$r_{34,9,11} \ = \ -1.0$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle = r_{34,10,12} P_{10}$

$r_{34,10,12} \ = \ 1$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle = r_{34,5,15} P_5$

$r_{34,5,15} \ = \ -1.0$

$\hat{O}_{35} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_2\rangle = r_{35,15,2} P_{15}$

$r_{35,15,2} \ = \ -ci_{2,2} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_3\rangle = r_{35,15,3} P_{15}$

$r_{35,15,3} \ = \ -ci_{3,2} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_6\rangle = r_{35,2,6} P_2 + r_{35,3,6} P_3$

$r_{35,2,6} \ = \ -1.0 * inv_{3,2}$

$r_{35,3,6} \ = \ -1.0 * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_7\rangle = r_{35,11,7} P_{11}$

$r_{35,11,7} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_{10}\rangle = r_{35,14,10} P_{14}$

$r_{35,14,10} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta |P_{15}\rangle =$

$\hat{O}_{36} : \langle P_p | \hat{1}^+_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_0\rangle = r_{36,4,0} P_4$

$r_{36,4,0} \ = \ ci_{0,0}$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_1\rangle = r_{36,4,1} P_4$

$r_{36,4,1} \ = \ ci_{1,0}$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_5\rangle = r_{36,0,5} P_0 + r_{36,1,5} P_1$

$r_{36,0,5} \ = \ inv_{1,0}$

$r_{36,1,5} \ = \ inv_{1,1}$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_9\rangle = r_{36,8,9} P_8$

$r_{36,8,9} \ = \ 1$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_{13}\rangle = r_{36,12,13} P_{12}$

$r_{36,12,13} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{37} : \langle P_p|\hat{1}^-_\alpha\hat{0}^-_\beta|P_q\rangle =>$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_0\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_1\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_2\rangle = r_{37,6,2}P_6$

$r_{37,6,2} \ = \ ci_{2,3}$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_3\rangle = r_{37,6,3}P_6$

$r_{37,6,3} \ = \ ci_{3,3}$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_4\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_5\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_6\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_7\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_8\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_9\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_{10}\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_{11}\rangle = r_{37,7,11}P_7$

$r_{37,7,11} \ = \ 1$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_{12}\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_{13}\rangle =$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_{14}\rangle = r_{37,10,14}P_{10}$

$r_{37,10,14} \ = \ 1$

$\hat{1}^-_\alpha\hat{0}^-_\beta|P_{15}\rangle = r_{37,2,15}P_2 + r_{37,3,15}P_3$

$r_{37,2,15} \ = \ inv_{2,2}$

$r_{37,3,15} \ = \ inv_{2,3}$

$\hat{O}_{38} : \langle P_p|\hat{1}^+_\alpha\hat{1}^+_\alpha|P_q\rangle =>$

$\hat{1}^+_\alpha\hat{1}^+_\alpha|P_0\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\alpha|P_1\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\alpha|P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha |P_{15}\rangle =$

$\hat{O}_{39} : \langle P_p | \hat{1}^+_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{1}^-_\alpha |P_0\rangle = r_{39,0,0} P_0 + r_{39,1,0} P_1$

$r_{39,0,0} = ci_{0,1} * inv_{1,0}$

$r_{39,1,0} = ci_{0,1} * inv_{1,1}$

$\hat{1}^+_\alpha \hat{1}^-_\alpha |P_1\rangle = r_{39,0,1} P_0 + r_{39,1,1} P_1$

$r_{39,0,1} = ci_{1,1} * inv_{1,0}$

$r_{39,1,1} = ci_{1,1} * inv_{1,1}$

$\hat{1}^+_\alpha \hat{1}^-_\alpha |P_2\rangle = r_{39,2,2} P_2 + r_{39,3,2} P_3$

$r_{39,2,2} = ci_{2,3} * inv_{3,2}$

$r_{39,3,2} = ci_{2,3} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{1}^-_\alpha |P_3\rangle = r_{39,2,3} P_2 + r_{39,3,3} P_3$

$r_{39,2,3} = ci_{3,3} * inv_{3,2}$

$r_{39,3,3} = ci_{3,3} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{1}^-_\alpha |P_4\rangle = r_{39,4,4} P_4$

$r_{39,4,4} = 1.0$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_5\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_6\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_7\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_8\rangle = r_{39,8,8}P_8$

$r_{39,8,8} = 1$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_9\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{11}\rangle = r_{39,11,11}P_{11}$

$r_{39,11,11} = 1$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{12}\rangle = r_{39,12,12}P_{12}$

$r_{39,12,12} = 1.0$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{14}\rangle = r_{39,14,14}P_{14}$

$r_{39,14,14} = 1.0$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{15}\rangle = r_{39,15,15}P_{15}$

$r_{39,15,15} = 1$

$\hat{O}_{40} : \langle P_p|\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_q\rangle =>$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_0\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_1\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_2\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_3\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_4\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_5\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_6\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_7\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_8\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_9\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{41} : \langle P_p|\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_q\rangle =>$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_0\rangle = r_{41,15,0}P_{15}$

$r_{41,15,0} \ = \ ci_{0,0}$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_1\rangle = r_{41,15,1}P_{15}$

$r_{41,15,1} \ = \ ci_{1,0}$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_2\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_3\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_4\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_5\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_6\rangle = r_{41,0,6}P_0 + r_{41,1,6}P_1$

$r_{41,0,6} \ = \ inv_{1,0}$

$r_{41,1,6} \ = \ inv_{1,1}$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_7\rangle = r_{41,12,7}P_{12}$

$r_{41,12,7} \ = \ 1$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_8\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_9\rangle = r_{41,14,9}P_{14}$

$r_{41,14,9} \ = \ 1$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_{10}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_{11}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_{12}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_{13}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_{14}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}|P_{15}\rangle =$

$\hat{O}_{42} : \langle P_p|\hat{1}^+_\alpha\hat{1}^-_\beta|P_q\rangle =>$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_0\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_1\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_2\rangle = r_{42,4,2}P_4$

$r_{42,4,2} \ = \ ci_{2,2}$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_3\rangle = r_{42,4,3}P_4$

$r_{42,4,3} \ = \ ci_{3,2}$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_4\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_5\rangle = r_{42,2,5}P_2 + r_{42,3,5}P_3$

$r_{42,2,5} \ = \ inv_{3,2}$

$r_{42,3,5} \ = \ inv_{3,3}$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_6\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_7\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_8\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_9\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_{10}\rangle = r_{42,8,10}P_8$

$r_{42,8,10} \ = \ 1$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_{11}\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_{12}\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_{13}\rangle = r_{42,11,13}P_{11}$

$r_{42,11,13} \ = \ 1$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_{14}\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta|P_{15}\rangle =$

$\hat{O}_{43} : \langle P_p|\hat{1}^-_\alpha\hat{1}^-_\beta|P_q\rangle =>$

$\hat{1}^-_\alpha\hat{1}^-_\beta|P_0\rangle = r_{43,6,0}P_6$

$r_{43,6,0} \ = \ -ci_{0,1} * 1$

$\hat{1}^-_\alpha\hat{1}^-_\beta|P_1\rangle = r_{43,6,1}P_6$

$r_{43,6,1} = -ci_{1,1} * 1$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle = r_{43,7,12} P_7$

$r_{43,7,12} = -1.0$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle = r_{43,9,14} P_9$

$r_{43,9,14} = -1.0$

$\hat{1}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle = r_{43,0,15} P_0 + r_{43,1,15} P_1$

$r_{43,0,15} = -1.0 * inv_{0,0}$

$r_{43,1,15} = -1.0 * inv_{0,1}$

$\hat{O}_{44} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_2\rangle = r_{44,15,2} P_{15}$

$r_{44,15,2} = -ci_{2,3} * 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_3\rangle = r_{44,15,3} P_{15}$

$r_{44,15,3} = -ci_{3,3} * 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_6\rangle = r_{44,2,6} P_2 + r_{44,3,6} P_3$

$r_{44,2,6} \;=\; -1.0 * inv_{2,2}$

$r_{44,3,6} \;=\; -1.0 * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_8\rangle = r_{44,12,8} P_{12}$

$r_{44,12,8} \;=\; 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_9\rangle = r_{44,13,9} P_{13}$

$r_{44,13,9} \;=\; 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha |P_{15}\rangle =$

$\hat{O}_{45} : \langle P_p | \hat{1}^+_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{0}^-_\alpha |P_0\rangle = r_{45,5,0} P_5$

$r_{45,5,0} \;=\; -ci_{0,0} * 1$

$\hat{1}^+_\beta \hat{0}^-_\alpha |P_1\rangle = r_{45,5,1} P_5$

$r_{45,5,1} \;=\; -ci_{1,0} * 1$

$\hat{1}^+_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha |P_4\rangle = r_{45,0,4} P_0 + r_{45,1,4} P_1$

$r_{45,0,4} \;=\; -1.0 * inv_{1,0}$

$r_{45,1,4} \;=\; -1.0 * inv_{1,1}$

$\hat{1}^+_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha |P_7\rangle = r_{45,10,7} P_{10}$

$r_{45,10,7} \;=\; 1$

$\hat{1}^{+}_{\beta}\hat{0}^{-}_{\alpha}|P_8\rangle =$

$\hat{1}^{+}_{\beta}\hat{0}^{-}_{\alpha}|P_9\rangle =$

$\hat{1}^{+}_{\beta}\hat{0}^{-}_{\alpha}|P_{10}\rangle =$

$\hat{1}^{+}_{\beta}\hat{0}^{-}_{\alpha}|P_{11}\rangle = r_{45,14,11}P_{14}$

$r_{45,14,11} \ = \ 1$

$\hat{1}^{+}_{\beta}\hat{0}^{-}_{\alpha}|P_{12}\rangle =$

$\hat{1}^{+}_{\beta}\hat{0}^{-}_{\alpha}|P_{13}\rangle =$

$\hat{1}^{+}_{\beta}\hat{0}^{-}_{\alpha}|P_{14}\rangle =$

$\hat{1}^{+}_{\beta}\hat{0}^{-}_{\alpha}|P_{15}\rangle =$

$\hat{O}_{46} : \langle P_p|\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_q\rangle =>$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_0\rangle =$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_1\rangle =$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_2\rangle = r_{46,6,2}P_6$

$r_{46,6,2} \ = \ ci_{2,2}$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_3\rangle = r_{46,6,3}P_6$

$r_{46,6,3} \ = \ ci_{3,2}$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_4\rangle =$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_5\rangle =$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_6\rangle =$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_7\rangle =$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_8\rangle =$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_9\rangle =$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_{10}\rangle =$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_{11}\rangle =$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_{12}\rangle = r_{46,8,12}P_8$

$r_{46,8,12} \ = \ -1.0$

$\hat{1}^{-}_{\beta}\hat{0}^{-}_{\alpha}|P_{13}\rangle = r_{46,9,13}P_9$

$r_{46,9,13} \ = \ -1.0$

$\hat{1}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle = r_{46,2,15} P_2 + r_{46,3,15} P_3$

$r_{46,2,15} \ = \ inv_{3,2}$

$r_{46,3,15} \ = \ inv_{3,3}$

$\hat{O}_{47} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_4\rangle = r_{47,15,4} P_{15}$

$r_{47,15,4} \ = \ 1$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_6\rangle = r_{47,5,6} P_5$

$r_{47,5,6} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_7\rangle = r_{47,13,7} P_{13}$

$r_{47,13,7} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_8\rangle = r_{47,14,8} P_{14}$

$r_{47,14,8} \ = \ 1$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta |P_{15}\rangle =$

$\hat{O}_{48} : \langle P_p | \hat{1}^+_\beta \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_0\rangle = r_{48,2,0} P_2 + r_{48,3,0} P_3$

$r_{48,2,0} = ci_{0,0} * inv_{2,2}$

$r_{48,3,0} = ci_{0,0} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_1\rangle = r_{48,2,1} P_2 + r_{48,3,1} P_3$

$r_{48,2,1} = ci_{1,0} * inv_{2,2}$

$r_{48,3,1} = ci_{1,0} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_2\rangle = r_{48,0,2} P_0 + r_{48,1,2} P_1$

$r_{48,0,2} = -ci_{2,3} * inv_{1,0}$

$r_{48,1,2} = -ci_{2,3} * inv_{1,1}$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_3\rangle = r_{48,0,3} P_0 + r_{48,1,3} P_1$

$r_{48,0,3} = -ci_{3,3} * inv_{1,0}$

$r_{48,1,3} = -ci_{3,3} * inv_{1,1}$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_9\rangle = r_{48,10,9} P_{10}$

$r_{48,10,9} = 1$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_{11}\rangle = r_{48,12,11} P_{12}$

$r_{48,12,11} = -1.0$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{49} : \langle P_p | \hat{1}^-_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_5\rangle = r_{49,6,5} P_6$

$r_{49,6,5} \ = \ 1$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_{13}\rangle = r_{49,7,13} P_7$

$r_{49,7,13} \ = \ 1$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_{14}\rangle = r_{49,8,14} P_8$

$r_{49,8,14} \ = \ -1.0$

$\hat{1}^-_\beta \hat{0}^-_\beta |P_{15}\rangle = r_{49,4,15} P_4$

$r_{49,4,15} \ = \ -1.0$

$\hat{O}_{50} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_0\rangle = r_{50,15,0} P_{15}$

$r_{50,15,0} \ = \ -ci_{0,0} * 1$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_1\rangle = r_{50,15,1} P_{15}$

$r_{50,15,1} \ = \ -ci_{1,0} * 1$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_6\rangle = r_{50,0,6} P_0 + r_{50,1,6} P_1$

$r_{50,0,6} = -1.0 * inv_{1,0}$

$r_{50,1,6} = -1.0 * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_7\rangle = r_{50,12,7} P_{12}$

$r_{50,12,7} = -1.0$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_9\rangle = r_{50,14,9} P_{14}$

$r_{50,14,9} = -1.0$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha |P_{15}\rangle =$

$\hat{O}_{51} : \langle P_p | \hat{1}^+_\beta \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_2\rangle = r_{51,5,2} P_5$

$r_{51,5,2} = ci_{2,3}$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_3\rangle = r_{51,5,3} P_5$

$r_{51,5,3} = ci_{3,3}$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_4\rangle = r_{51,2,4} P_2 + r_{51,3,4} P_3$

$r_{51,2,4} = inv_{2,2}$

$r_{51,3,4} = inv_{2,3}$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_8\rangle = r_{51,10,8} P_{10}$

$r_{51,10,8} = 1$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_{11}\rangle = r_{51,13,11} P_{13}$

$r_{51,13,11} \ = \ 1$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{52} : \langle P_p | \hat{1}^-_\beta \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_0\rangle = r_{52,6,0} P_6$

$r_{52,6,0} \ = \ ci_{0,1}$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_1\rangle = r_{52,6,1} P_6$

$r_{52,6,1} \ = \ ci_{1,1}$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle = r_{52,7,12} P_7$

$r_{52,7,12} \ = \ 1$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{52,9,14} P_9$

$r_{52,9,14} \ = \ 1$

$\hat{1}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{15}\rangle = r_{52,0,15}P_0 + r_{52,1,15}P_1$

$r_{52,0,15} \;=\; inv_{0,0}$

$r_{52,1,15} \;=\; inv_{0,1}$

$\hat{O}_{53} : \langle P_p|\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_q\rangle =>$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_0\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_1\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_2\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_3\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_4\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_5\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_6\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_7\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_8\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_9\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_{10}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_{11}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_{12}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_{13}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_{14}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}|P_{15}\rangle =$

$\hat{O}_{54} : \langle P_p|\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_0\rangle = r_{54,0,0}P_0 + r_{54,1,0}P_1$

$r_{54,0,0} \;=\; ci_{0,1} * inv_{1,0}$

$r_{54,1,0} \;=\; ci_{0,1} * inv_{1,1}$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_1\rangle = r_{54,0,1}P_0 + r_{54,1,1}P_1$

$r_{54,0,1} \;=\; ci_{1,1} * inv_{1,0}$

$r_{54,1,1} \;=\; ci_{1,1} * inv_{1,1}$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_2\rangle = r_{54,2,2}P_2 + r_{54,3,2}P_3$

$r_{54,2,2} \;=\; ci_{2,2} * inv_{2,2}$

$r_{54,3,2} \;=\; ci_{2,2} * inv_{2,3}$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_3\rangle = r_{54,2,3}P_2 + r_{54,3,3}P_3$

$r_{54,2,3} \;=\; ci_{3,2} * inv_{2,2}$

$r_{54,3,3} \;=\; ci_{3,2} * inv_{2,3}$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_4\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_5\rangle = r_{54,5,5}P_5$

$r_{54,5,5} \;=\; 1.0$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_6\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_7\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_8\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_9\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_{10}\rangle = r_{54,10,10}P_{10}$

$r_{54,10,10} \;=\; 1$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_{11}\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_{12}\rangle = r_{54,12,12}P_{12}$

$r_{54,12,12} \;=\; 1$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_{13}\rangle = r_{54,13,13}P_{13}$

$r_{54,13,13} \;=\; 1$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_{14}\rangle = r_{54,14,14}P_{14}$

$r_{54,14,14} \;=\; 1$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\beta}|P_{15}\rangle = r_{54,15,15}P_{15}$

$r_{54,15,15} \;=\; 1.0$

$\hat{O}_{55} : \langle P_p|\hat{1}^{-}_{\beta}\hat{1}^{-}_{\beta}|P_q\rangle =>$

$\hat{1}^{-}_{\beta}\hat{1}^{-}_{\beta}|P_0\rangle =$

$\hat{1}^{-}_{\beta}\hat{1}^{-}_{\beta}|P_1\rangle =$

$\hat{1}^{-}_{\beta}\hat{1}^{-}_{\beta}|P_2\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{56} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{57} : \langle P_p | \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{58} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{59} : \langle P_p | \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{59,7,0} P_7$

$r_{59,7,0} \ = \ -ci_{0,0} * 1$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_1\rangle = r_{59,7,1} P_7$

$r_{59,7,1} \ = \ -ci_{1,0} * 1$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle = r_{59,4,11} P_4$

$r_{59,4,11} \ = \ -1.0$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle = r_{59,2,13} P_2 + r_{59,3,13} P_3$

$r_{59,2,13} \ = \ -1.0 * inv_{2,2}$

$r_{59,3,13} \ = \ -1.0 * inv_{2,3}$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle = r_{59,12,15} P_{12}$

$r_{59,12,15} \ = \ -1.0$

$\hat{O}_{60} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{61} : \langle P_p | \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_4\rangle = r_{61,7,4} P_7$

$r_{61,7,4} = -1.0$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle = r_{61,0,11} P_0 + r_{61,1,11} P_1$

$r_{61,0,11} = inv_{0,0}$

$r_{61,1,11} = inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle = r_{61,2,12} P_2 + r_{61,3,12} P_3$

$r_{61,2,12} = -1.0 * inv_{2,2}$

$r_{61,3,12} = -1.0 * inv_{2,3}$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle = r_{61,13,15} P_{13}$

$r_{61,13,15} = 1$

$\hat{O}_{62} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-|P_{15}\rangle =$

$\hat{O}_{63} : \langle P_p|\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_2\rangle = r_{63,7,2}P_7$

$r_{63,7,2} \ = \ -ci_{2,2} * 1$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_3\rangle = r_{63,7,3}P_7$

$r_{63,7,3} \ = \ -ci_{3,2} * 1$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{12}\rangle = r_{63,4,12}P_4$

$r_{63,4,12} \ = \ 1$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{13}\rangle = r_{63,0,13}P_0 + r_{63,1,13}P_1$

$r_{63,0,13} \ = \ inv_{0,0}$

$r_{63,1,13} \ = \ inv_{0,1}$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{15}\rangle = r_{63,11,15}P_{11}$

$r_{63,11,15} \ = \ -1.0$

$\hat{O}_{64} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_0 \rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_1 \rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_2 \rangle = r_{64,13,2} P_{13}$

$r_{64,13,2} \ = \ ci_{2,2}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_3 \rangle = r_{64,13,3} P_{13}$

$r_{64,13,3} \ = \ ci_{3,2}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_4 \rangle = r_{64,11,4} P_{11}$

$r_{64,11,4} \ = \ 1$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_5 \rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_6 \rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_7 \rangle = r_{64,0,7} P_0 + r_{64,1,7} P_1$

$r_{64,0,7} \ = \ inv_{0,0}$

$r_{64,1,7} \ = \ inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_8 \rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_9 \rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_{10} \rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_{11} \rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_{12} \rangle = r_{64,15,12} P_{15}$

$r_{64,15,12} \ = \ 1$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_{13} \rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_{14} \rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha | P_{15} \rangle =$

$\hat{O}_{65} : \langle P_p | \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha | P_0 \rangle = r_{65,7,0} P_7$

$r_{65,7,0} \ = \ ci_{0,0}$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_1\rangle = r_{65,7,1} P_7$

$r_{65,7,1} \ = \ ci_{1,0}$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle = r_{65,4,11} P_4$

$r_{65,4,11} \ = \ 1$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle = r_{65,2,13} P_2 + r_{65,3,13} P_3$

$r_{65,2,13} \ = \ inv_{2,2}$

$r_{65,3,13} \ = \ inv_{2,3}$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle = r_{65,12,15} P_{12}$

$r_{65,12,15} \ = \ 1$

$\hat{O}_{66} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_2\rangle = r_{66,11,2} P_{11}$

$r_{66,11,2} \ = \ ci_{2,3}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_3\rangle = r_{66,11,3} P_{11}$

$r_{66,11,3} \ = \ ci_{3,3}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_5\rangle = r_{66,13,5} P_{13}$

$r_{66,13,5} \ = \ 1$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_9\rangle = r_{66,0,9} P_0 + r_{66,1,9} P_1$

$r_{66,0,9} \ = \ inv_{0,0}$

$r_{66,1,9} \ = \ inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{14}\rangle = r_{66,15,14} P_{15}$

$r_{66,15,14} \ = \ 1$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{67} : \langle P_p | \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{68} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_0\rangle = r_{68,13,0}P_{13}$

$r_{68,13,0} \ = \ ci_{0,1}$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_1\rangle = r_{68,13,1}P_{13}$

$r_{68,13,1} \ = \ ci_{1,1}$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_2\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_3\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_8\rangle = r_{68,0,8}P_0 + r_{68,1,8}P_1$

$r_{68,0,8} \ = \ inv_{0,0}$

$r_{68,1,8} \ = \ inv_{0,1}$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{69} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_2\rangle = r_{69,7,2} P_7$

$r_{69,7,2} \ = \ -ci_{2,3} * 1$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_3\rangle = r_{69,7,3} P_7$

$r_{69,7,3} \ = \ -ci_{3,3} * 1$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{69,2,14} P_2 + r_{69,3,14} P_3$

$r_{69,2,14} \ = \ -1.0 * inv_{2,2}$

$r_{69,3,14} \ = \ -1.0 * inv_{2,3}$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{70} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_0\rangle = r_{70,11,0} P_{11}$

$r_{70,11,0} \ = \ -ci_{0,1} * 1$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_1\rangle = r_{70,11,1} P_{11}$

$r_{70,11,1} \ = \ -ci_{1,1} * 1$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{10}\rangle = r_{70,0,10} P_0 + r_{70,1,10} P_1$

$r_{70,0,10} \ = \ inv_{0,0}$

$r_{70,1,10} \ = \ inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{71} : \langle P_p | \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_5\rangle = r_{71,7,5} P_7$

$r_{71,7,5} \ = \ -1.0$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{14}\rangle = r_{71,4,14}P_4$

$r_{71,4,14} \ = \ 1$

$\hat{0}_{\alpha}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{72} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_0\rangle = r_{72,11,0}P_{11}$

$r_{72,11,0} \ = \ -ci_{0,0} * 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_1\rangle = r_{72,11,1}P_{11}$

$r_{72,11,1} \ = \ -ci_{1,0} * 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_2\rangle = r_{72,12,2}P_{12}$

$r_{72,12,2} \ = \ ci_{2,2}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_3\rangle = r_{72,12,3}P_{12}$

$r_{72,12,3} \ = \ ci_{3,2}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_7\rangle = r_{72,4,7}P_4$

$r_{72,4,7} \ = \ 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{13}\rangle = r_{72,15,13}P_{15}$

$r_{72,15,13} \ = \ -1.0$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{73} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_0\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_1\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_2\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_3\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_4\rangle = r_{73,7,4} P_7$

$r_{73,7,4} \ = \ 1$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_5\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_6\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_7\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_8\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_9\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{11}\rangle = r_{73,0,11} P_0 + r_{73,1,11} P_1$

$r_{73,0,11} \ = \ -1.0 * inv_{0,0}$

$r_{73,1,11} \ = \ -1.0 * inv_{0,1}$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{12}\rangle = r_{73,2,12} P_2 + r_{73,3,12} P_3$

$r_{73,2,12} \ = \ inv_{2,2}$

$r_{73,3,12} \ = \ inv_{2,3}$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{13}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{15}\rangle = r_{73,13,15} P_{13}$

$r_{73,13,15} \ = \ -1.0$

$\hat{O}_{74} : \langle P_p | \hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- | P_q \rangle =>$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_0\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_1\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_2\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_3\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_5\rangle = r_{74,12,5}P_{12}$

$r_{74,12,5} \ = \ 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_9\rangle = r_{74,4,9}P_4$

$r_{74,4,9} \ = \ 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{0}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{75} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_0\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_1\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_2\rangle = r_{75,7,2}P_7$

$r_{75,7,2} \ = \ ci_{2,3}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_3\rangle = r_{75,7,3}P_7$

$r_{75,7,3} \ = \ ci_{3,3}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{14}\rangle = r_{75,2,14}P_2 + r_{75,3,14}P_3$

$r_{75,2,14} \ = \ inv_{2,2}$

$r_{75,3,14} \ = \ inv_{2,3}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{76} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_0\rangle = r_{76,12,0}P_{12}$

$r_{76,12,0} \ = \ ci_{0,1}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_1\rangle = r_{76,12,1}P_{12}$

$r_{76,12,1} \ = \ ci_{1,1}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_2\rangle = r_{76,11,2}P_{11}$

$r_{76,11,2} \ = \ ci_{2,3}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_3\rangle = r_{76,11,3}P_{11}$

$r_{76,11,3} \ = \ ci_{3,3}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_8\rangle = r_{76,4,8}P_4$

$r_{76,4,8} \ = \ 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}|P_{14}\rangle = r_{76,15,14}P_{15}$

$r_{76,15,14} \ = \ 1.0$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{1}_\alpha^- |P_{15}\rangle =$

$\hat{O}_{77} : \langle P_p | \hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- | P_q \rangle =>$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_0\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_1\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_2\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_3\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_4\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_5\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_6\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_7\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_8\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_9\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{11}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{12}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{13}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{15}\rangle =$

$\hat{O}_{78} : \langle P_p | \hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{1}_\beta^- | P_q \rangle =>$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_0\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_1\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_2\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_3\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_4\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_5\rangle = r_{78,11,5} P_{11}$

$r_{78,11,5} \ = \ 1.0$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{10}\rangle = r_{78,4,10}P_4$

$r_{78,4,10} \ = \ 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{79} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_0\rangle = r_{79,7,0}P_7$

$r_{79,7,0} \ = \ -ci_{0,1} * 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_1\rangle = r_{79,7,1}P_7$

$r_{79,7,1} \ = \ -ci_{1,1} * 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_2\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_3\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{14}\rangle = r_{79,0,14}P_0 + r_{79,1,14}P_1$

$r_{79,0,14} = -1.0 * inv_{0,0}$

$r_{79,1,14} = -1.0 * inv_{0,1}$

$\hat{0}_\alpha^+ \hat{1}_\alpha^- \hat{1}_\beta^- |P_{15}\rangle =$

$\hat{O}_{80} : \langle P_p | \hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- | P_q \rangle =>$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_0\rangle = r_{80,13,0} P_{13}$

$r_{80,13,0} = -ci_{0,0} * 1$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_1\rangle = r_{80,13,1} P_{13}$

$r_{80,13,1} = -ci_{1,0} * 1$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_2\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_3\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_4\rangle = r_{80,12,4} P_{12}$

$r_{80,12,4} = -1.0$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_5\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_6\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_7\rangle = r_{80,2,7} P_2 + r_{80,3,7} P_3$

$r_{80,2,7} = inv_{2,2}$

$r_{80,3,7} = inv_{2,3}$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_8\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_9\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_{11}\rangle = r_{80,15,11} P_{15}$

$r_{80,15,11} = 1$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_{12}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_{13}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\alpha^- |P_{15}\rangle =$

$\hat{O}_{81} : \langle P_p | \hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\alpha^- | P_q \rangle =>$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_0\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_1\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_2\rangle = r_{81,7,2}P_7$

$r_{81,7,2} \ = \ ci_{2,2}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_3\rangle = r_{81,7,3}P_7$

$r_{81,7,3} \ = \ ci_{3,2}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{12}\rangle = r_{81,4,12}P_4$

$r_{81,4,12} \ = \ -1.0$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{13}\rangle = r_{81,0,13}P_0 + r_{81,1,13}P_1$

$r_{81,0,13} \ = \ -1.0 * inv_{0,0}$

$r_{81,1,13} \ = \ -1.0 * inv_{0,1}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{15}\rangle = r_{81,11,15}P_{11}$

$r_{81,11,15} \ = \ 1$

$\hat{O}_{82} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_0\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_1\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_2\rangle = r_{82,12,2}P_{12}$

$r_{82,12,2} \ = \ -ci_{2,3} * 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_3\rangle = r_{82,12,3}P_{12}$

$r_{82,12,3} = -ci_{3,3} * 1$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_4\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_5\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_6\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_7\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_8\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_9\rangle = r_{82,2,9} P_2 + r_{82,3,9} P_3$

$r_{82,2,9} = inv_{2,2}$

$r_{82,3,9} = inv_{2,3}$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_{10}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_{11}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_{12}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_{13}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_{14}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_{15}\rangle =$

$\hat{O}_{83} : \langle P_p | \hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_q\rangle =>$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_0\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_1\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_2\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_3\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_4\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_5\rangle = r_{83,7,5} P_7$

$r_{83,7,5} = 1$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_6\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_7\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_8\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_9\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{14}\rangle = r_{83,4,14}P_4$

$r_{83,4,14} \ = \ -1.0$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{84} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_0\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_1\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_2\rangle = r_{84,13,2}P_{13}$

$r_{84,13,2} \ = \ ci_{2,3}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_3\rangle = r_{84,13,3}P_{13}$

$r_{84,13,3} \ = \ ci_{3,3}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_8\rangle = r_{84,2,8}P_2 + r_{84,3,8}P_3$

$r_{84,2,8} \ = \ inv_{2,2}$

$r_{84,3,8} \ = \ inv_{2,3}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{85} : \langle P_p|\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_0\rangle = r_{85,7,0}P_7$

$r_{85,7,0} \;=\; ci_{0,1}$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_1\rangle = r_{85,7,1}P_7$

$r_{85,7,1} \;=\; ci_{1,1}$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_2\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_3\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_4\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_5\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_6\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_8\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_9\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_{14}\rangle = r_{85,0,14}P_0 + r_{85,1,14}P_1$

$r_{85,0,14} \;=\; inv_{0,0}$

$r_{85,1,14} \;=\; inv_{0,1}$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha|P_{15}\rangle =$

$\hat{O}_{86} : \langle P_p|\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta|P_q\rangle =>$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta|P_0\rangle = r_{86,12,0}P_{12}$

$r_{86,12,0} \;=\; ci_{0,1}$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta|P_1\rangle = r_{86,12,1}P_{12}$

$r_{86,12,1} \;=\; ci_{1,1}$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta|P_2\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta|P_3\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_5\rangle = r_{86,13,5} P_{13}$

$r_{86,13,5} \ = \ 1.0$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_{10}\rangle = r_{86,2,10} P_2 + r_{86,3,10} P_3$

$r_{86,2,10} \ = \ inv_{2,2}$

$r_{86,3,10} \ = \ inv_{2,3}$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_{14}\rangle = r_{86,15,14} P_{15}$

$r_{86,15,14} \ = \ 1$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{87} : \langle P_p | \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{88} : \langle P_p|\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_0\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_1\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_2\rangle = r_{88,13,2}P_{13}$

$r_{88,13,2} \ = \ -ci_{2,2} * 1$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_3\rangle = r_{88,13,3}P_{13}$

$r_{88,13,3} \ = \ -ci_{3,2} * 1$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_4\rangle = r_{88,11,4}P_{11}$

$r_{88,11,4} \ = \ -1.0$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_5\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_6\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_7\rangle = r_{88,0,7}P_0 + r_{88,1,7}P_1$

$r_{88,0,7} \ = \ -1.0 * inv_{0,0}$

$r_{88,1,7} \ = \ -1.0 * inv_{0,1}$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{12}\rangle = r_{88,15,12}P_{15}$

$r_{88,15,12} \ = \ -1.0$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{0}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{89} : \langle P_p|\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha|P_{15}\rangle =$

$\hat{O}_{90} : \langle P_p|\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta|P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta|P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta|P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta|P_2\rangle = r_{90,11,2}P_{11}$

$r_{90,11,2} \ = \ -ci_{2,3} * 1$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta|P_3\rangle = r_{90,11,3}P_{11}$

$r_{90,11,3} \ = \ -ci_{3,3} * 1$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta|P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta|P_5\rangle = r_{90,13,5}P_{13}$

$r_{90,13,5} \ = \ -1.0$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_9\rangle = r_{90,0,9} P_0 + r_{90,1,9} P_1$

$r_{90,0,9} \ = \ -1.0 * inv_{0,0}$

$r_{90,1,9} \ = \ -1.0 * inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{14}\rangle = r_{90,15,14} P_{15}$

$r_{90,15,14} \ = \ -1.0$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{91} : \langle P_p | \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{91,9,0} P_9$

$r_{91,9,0} \ = \ -ci_{0,0} * 1$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_1\rangle = r_{91,9,1} P_9$

$r_{91,9,1} \ = \ -ci_{1,0} * 1$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle = r_{91,2,11} P_2 + r_{91,3,11} P_3$

$r_{91,2,11} = -1.0 * inv_{3,2}$

$r_{91,3,11} = -1.0 * inv_{3,3}$

$\hat{0}_\beta^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_{12}\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_{13}\rangle = r_{91,5,13} P_5$

$r_{91,5,13} = -1.0$

$\hat{0}_\beta^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_{14}\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_{15}\rangle = r_{91,14,15} P_{14}$

$r_{91,14,15} = -1.0$

$\hat{O}_{92} : \langle P_p | \hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- | P_q \rangle =>$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_0\rangle = r_{92,13,0} P_{13}$

$r_{92,13,0} = -ci_{0,1} * 1$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_1\rangle = r_{92,13,1} P_{13}$

$r_{92,13,1} = -ci_{1,1} * 1$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_2\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_3\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_4\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_5\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_6\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_7\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_8\rangle = r_{92,0,8} P_0 + r_{92,1,8} P_1$

$r_{92,0,8} = -1.0 * inv_{0,0}$

$r_{92,1,8} = -1.0 * inv_{0,1}$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_9\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_{11}\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_{12}\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_{13}\rangle =$

$\hat{0}_\beta^+ \hat{0}_\alpha^+ \hat{1}_\alpha^- |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{93} : \langle P_p | \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_4\rangle = r_{93,9,4} P_9$

$r_{93,9,4} \ = \ -1.0$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle = r_{93,5,12} P_5$

$r_{93,5,12} \ = \ -1.0$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{94} : \langle P_p | \hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta | P_q \rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_0\rangle = r_{94,11,0} P_{11}$

$r_{94,11,0} \ = \ ci_{0,1}$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_1\rangle = r_{94,11,1} P_{11}$

$r_{94,11,1} \ = \ ci_{1,1}$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_5\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{10}\rangle = r_{94,0,10}P_0 + r_{94,1,10}P_1$

$r_{94,0,10} \ = \ -1.0 * inv_{0,0}$

$r_{94,1,10} \ = \ -1.0 * inv_{0,1}$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{95} : \langle P_p|\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_0\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_1\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_2\rangle = r_{95,9,2}P_9$

$r_{95,9,2} \ = \ -ci_{2,2} * 1$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_3\rangle = r_{95,9,3}P_9$

$r_{95,9,3} \ = \ -ci_{3,2} * 1$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_5\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{12}\rangle = r_{95,2,12}P_2 + r_{95,3,12}P_3$

$r_{95,2,12} \ = \ inv_{3,2}$

$r_{95,3,12} \ = \ inv_{3,3}$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{96} : \langle P_p|\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_0\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_1\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_2\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_3\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_4\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_5\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_6\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_7\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{97} : \langle P_p|\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_0\rangle = r_{97,9,0}P_9$

$r_{97,9,0} \ = \ ci_{0,0}$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_1\rangle = r_{97,9,1} P_9$

$r_{97,9,1} \ = \ ci_{1,0}$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle = r_{97,2,11} P_2 + r_{97,3,11} P_3$

$r_{97,2,11} \ = \ inv_{3,2}$

$r_{97,3,11} \ = \ inv_{3,3}$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle = r_{97,5,13} P_5$

$r_{97,5,13} \ = \ 1$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle = r_{97,14,15} P_{14}$

$r_{97,14,15} \ = \ 1$

$\hat{O}_{98} : \langle P_p | \hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{99} : \langle P_p|\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_0\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_1\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_2\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_3\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_5\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{100} : \langle P_p|\hat{0}_{\beta}^{+}\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{101} : \langle P_p | \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_2\rangle = r_{101,9,2} P_9$

$r_{101,9,2} \ = \ -ci_{2,3} * 1$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_3\rangle = r_{101,9,3} P_9$

$r_{101,9,3} \ = \ -ci_{3,3} * 1$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle = r_{101,0,11} P_0 + r_{101,1,11} P_1$

$r_{101,0,11} \ = \ inv_{0,0}$

$r_{101,1,11} \ = \ inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{101,5,14} P_5$

$r_{101,5,14} \ = \ -1.0$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle = r_{101,13,15} P_{13}$

$r_{101,13,15} \ = \ 1.0$

$\hat{O}_{102} : \langle P_p | \hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{103} : \langle P_p|\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_5\rangle = r_{103,9,5}P_9$

$r_{103,9,5} = -1.0$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_{13}\rangle = r_{103,0,13}P_0 + r_{103,1,13}P_1$

$r_{103,0,13} = inv_{0,0}$

$r_{103,1,13} = inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_{14}\rangle = r_{103,2,14}P_2 + r_{103,3,14}P_3$

$r_{103,2,14} = inv_{3,2}$

$r_{103,3,14} = inv_{3,3}$

$\hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta|P_{15}\rangle = r_{103,11,15}P_{11}$

$r_{103,11,15} = -1.0$

$\hat{O}_{104} : \langle P_p|\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha|P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha|P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha|P_2\rangle = r_{104,14,2}P_{14}$

$r_{104,14,2} = ci_{2,2}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_3\rangle = r_{104,14,3} P_{14}$

$r_{104,14,3} = ci_{3,2}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_7\rangle = r_{104,2,7} P_2 + r_{104,3,7} P_3$

$r_{104,2,7} = inv_{3,2}$

$r_{104,3,7} = inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{105} : \langle P_p | \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_4\rangle = r_{105,9,4} P_9$

$r_{105,9,4} = 1$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_9\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{11}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{12}\rangle = r_{105,5,12} P_5$

$r_{105,5,12} \ = \ 1$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{13}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{0}_\alpha^- |P_{15}\rangle =$

$\hat{O}_{106} : \langle P_p | \hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- | P_q \rangle =>$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_0\rangle = r_{106,11,0} P_{11}$

$r_{106,11,0} \ = \ -ci_{0,0} * 1$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_1\rangle = r_{106,11,1} P_{11}$

$r_{106,11,1} \ = \ -ci_{1,0} * 1$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_2\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_3\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_4\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_5\rangle = r_{106,14,5} P_{14}$

$r_{106,14,5} \ = \ 1$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_6\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_7\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_8\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_9\rangle = r_{106,2,9} P_2 + r_{106,3,9} P_3$

$r_{106,2,9} \ = \ inv_{3,2}$

$r_{106,3,9} \ = \ inv_{3,3}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_{10}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_{11}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_{12}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- |P_{13}\rangle = r_{106,15,13} P_{15}$

$r_{106,15,13} = -1.0$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{107} : \langle P_p | \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_2\rangle = r_{107,9,2} P_9$

$r_{107,9,2} = ci_{2,3}$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_3\rangle = r_{107,9,3} P_9$

$r_{107,9,3} = ci_{3,3}$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle = r_{107,0,11} P_0 + r_{107,1,11} P_1$

$r_{107,0,11} = -1.0 * inv_{0,0}$

$r_{107,1,11} = -1.0 * inv_{0,1}$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle = r_{107,5,14} P_5$

$r_{107,5,14} = 1$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle = r_{107,13,15} P_{13}$

$r_{107,13,15} = -1.0$

$\hat{O}_{108} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_0\rangle = r_{108,14,0} P_{14}$

$r_{108,14,0} \ = \ ci_{0,1}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_1\rangle = r_{108,14,1} P_{14}$

$r_{108,14,1} \ = \ ci_{1,1}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_4\rangle = r_{108,11,4} P_{11}$

$r_{108,11,4} \ = \ -1.0$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_8\rangle = r_{108,2,8} P_2 + r_{108,3,8} P_3$

$r_{108,2,8} \ = \ inv_{3,2}$

$r_{108,3,8} \ = \ inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{12}\rangle = r_{108,15,12} P_{15}$

$r_{108,15,12} \ = \ -1.0$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{109} : \langle P_p | \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_5\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_6\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_7\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_8\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_9\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{11}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{12}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{13}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^- \hat{1}_\alpha^- |P_{15}\rangle =$

$\hat{O}_{110} : \langle P_p | \hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- | P_q \rangle =>$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_0\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_1\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_2\rangle = r_{110,11,2} P_{11}$

$r_{110,11,2} \ = \ -ci_{2,2} * 1$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_3\rangle = r_{110,11,3} P_{11}$

$r_{110,11,3} \ = \ -ci_{3,2} * 1$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_4\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_5\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_6\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_7\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_8\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_9\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_{10}\rangle = r_{110,2,10} P_2 + r_{110,3,10} P_3$

$r_{110,2,10} \ = \ inv_{3,2}$

$r_{110,3,10} \ = \ inv_{3,3}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{1}_\beta^- |P_{11}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{111} : \langle P_p|\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_0\rangle = r_{111,9,0}P_9$

$r_{111,9,0} \ = \ -ci_{0,1} * 1$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_1\rangle = r_{111,9,1}P_9$

$r_{111,9,1} \ = \ -ci_{1,1} * 1$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_2\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_3\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_5\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{12}\rangle = r_{111,0,12}P_0 + r_{111,1,12}P_1$

$r_{111,0,12} \ = \ inv_{0,0}$

$r_{111,1,12} \ = \ inv_{0,1}$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{112} : \langle P_p|\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_4\rangle = r_{112,14,4} P_{14}$

$r_{112,14,4} \ = \ -1.0$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_7\rangle = r_{112,5,7} P_5$

$r_{112,5,7} \ = \ 1$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{113} : \langle P_p | \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_2\rangle = r_{113,9,2} P_9$

$r_{113,9,2} \ = \ ci_{2,2}$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_3\rangle = r_{113,9,3} P_9$

$r_{113,9,3} \ = \ ci_{3,2}$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle = r_{113,2,12} P_2 + r_{113,3,12} P_3$

$r_{113,2,12} \ = \ -1.0 * inv_{3,2}$

$r_{113,3,12} \ = \ -1.0 * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{114} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta | P_q \rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_0\rangle = r_{114,13,0} P_{13}$

$r_{114,13,0} \ = \ -ci_{0,0} * 1$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_1\rangle = r_{114,13,1} P_{13}$

$r_{114,13,1} \ = \ -ci_{1,0} * 1$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_2\rangle = r_{114,14,2} P_{14}$

$r_{114,14,2} \ = \ -ci_{2,3} * 1$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_3\rangle = r_{114,14,3} P_{14}$

$r_{114,14,3} \ = \ -ci_{3,3} * 1$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_9\rangle = r_{114,5,9} P_5$

$r_{114,5,9} \ = \ 1$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_{11}\rangle = r_{114,15,11} P_{15}$

$r_{114,15,11} = 1.0$

$\hat{0}_\beta^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_{12}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_{13}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_{14}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^+ \hat{0}_\beta^- |P_{15}\rangle =$

$\hat{O}_{115} : \langle P_p | \hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_q\rangle =>$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_0\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_1\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_2\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_3\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_4\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_5\rangle = r_{115,9,5} P_9$

$r_{115,9,5} = 1$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_6\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_7\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_8\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_9\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_{10}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_{11}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_{12}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_{13}\rangle = r_{115,0,13} P_0 + r_{115,1,13} P_1$

$r_{115,0,13} = -1.0 * inv_{0,0}$

$r_{115,1,13} = -1.0 * inv_{0,1}$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_{14}\rangle = r_{115,2,14} P_2 + r_{115,3,14} P_3$

$r_{115,2,14} = -1.0 * inv_{3,2}$

$r_{115,3,14} = -1.0 * inv_{3,3}$

$\hat{0}_\beta^+ \hat{1}_\beta^- \hat{0}_\beta^- |P_{15}\rangle = r_{115,11,15} P_{11}$

$r_{115,11,15} = 1.0$

$\hat{O}_{116} : \langle P_p|\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_4\rangle = r_{116,13,4}P_{13}$

$r_{116,13,4} \ = \ -1.0$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_8\rangle = r_{116,5,8}P_5$

$r_{116,5,8} \ = \ 1$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha|P_{15}\rangle =$

$\hat{O}_{117} : \langle P_p|\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha|P_0\rangle = r_{117,9,0}P_9$

$r_{117,9,0} \ = \ ci_{0,1}$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha|P_1\rangle = r_{117,9,1}P_9$

$r_{117,9,1} \ = \ ci_{1,1}$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha|P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha|P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha|P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle = r_{117,0,12} P_0 + r_{117,1,12} P_1$

$r_{117,0,12} \;=\; -1.0 * inv_{0,0}$

$r_{117,1,12} \;=\; -1.0 * inv_{0,1}$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{118} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta | P_q \rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_0\rangle = r_{118,14,0} P_{14}$

$r_{118,14,0} \;=\; ci_{0,1}$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_1\rangle = r_{118,14,1} P_{14}$

$r_{118,14,1} \;=\; ci_{1,1}$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_2\rangle = r_{118,13,2} P_{13}$

$r_{118,13,2} \;=\; -ci_{2,2} * 1$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_3\rangle = r_{118,13,3} P_{13}$

$r_{118,13,3} \;=\; -ci_{3,2} * 1$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{10}\rangle = r_{118,5,10} P_5$

$r_{118,5,10} \ = \ 1$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{12}\rangle = r_{118,15,12} P_{15}$

$r_{118,15,12} \ = \ -1.0$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{119} : \langle P_p | \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{120} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_0\rangle = r_{120,11,0} P_{11}$

$r_{120,11,0} = ci_{0,0}$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_1\rangle = r_{120,11,1} P_{11}$

$r_{120,11,1} = ci_{1,0}$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_2\rangle = r_{120,12,2} P_{12}$

$r_{120,12,2} = -ci_{2,2} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_3\rangle = r_{120,12,3} P_{12}$

$r_{120,12,3} = -ci_{3,2} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_7\rangle = r_{120,4,7} P_4$

$r_{120,4,7} = -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{13}\rangle = r_{120,15,13} P_{15}$

$r_{120,15,13} = 1$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{121} : \langle P_p | \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{122} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_5\rangle = r_{122,12,5} P_{12}$

$r_{122,12,5} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_9\rangle = r_{122,4,9} P_4$

$r_{122,4,9} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{123} : \langle P_p | \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{123,8,0} P_8$

$r_{123,8,0} \ = \ -ci_{0,0} * 1$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_1\rangle = r_{123,8,1} P_8$

$r_{123,8,1} \ = \ -ci_{1,0} * 1$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle = r_{123,0,13} P_0 + r_{123,1,13} P_1$

$r_{123,0,13} \ = \ -1.0 * inv_{1,0}$

$r_{123,1,13} \ = \ -1.0 * inv_{1,1}$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{124} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_0\rangle = r_{124,12,0} P_{12}$

$r_{124,12,0} \ = \ -ci_{0,1} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_1\rangle = r_{124,12,1} P_{12}$

$r_{124,12,1} \ = \ -ci_{1,1} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_2\rangle = r_{124,11,2} P_{11}$

$r_{124,11,2} \ = \ -ci_{2,3} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_3\rangle = r_{124,11,3} P_{11}$

$r_{124,11,3} \ = \ -ci_{3,3} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_8\rangle = r_{124,4,8} P_4$

$r_{124,4,8} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{14}\rangle = r_{124,15,14} P_{15}$

$r_{124,15,14} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{125} : \langle P_p | \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_4\rangle = r_{125,8,4} P_8$

$r_{125,8,4} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle = r_{125,2,11} P_2 + r_{125,3,11} P_3$

$r_{125,2,11} \ = \ -1.0 * inv_{3,2}$

$r_{125,3,11} \ = \ -1.0 * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle = r_{125,0,12} P_0 + r_{125,1,12} P_1$

$r_{125,0,12} \ = \ -1.0 * inv_{1,0}$

$r_{125,1,12} \ = \ -1.0 * inv_{1,1}$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle = r_{125,14,15} P_{14}$

$r_{125,14,15} \ = \ -1.0$

$\hat{O}_{126} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_5\rangle = r_{126,11,5} P_{11}$

$r_{126,11,5} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_{10}\rangle = r_{126,4,10} P_4$

$r_{126,4,10} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{127} : \langle P_p | \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_2\rangle = r_{127,8,2} P_8$

$r_{127,8,2} \ = \ -ci_{2,2} * 1$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_3\rangle = r_{127,8,3} P_8$

$r_{127,8,3} \ = \ -ci_{3,2} * 1$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle = r_{127,2,13} P_2 + r_{127,3,13} P_3$

$r_{127,2,13} \ = \ -1.0 * inv_{3,2}$

$r_{127,3,13} \ = \ -1.0 * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{128} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_2\rangle = r_{128,14,2} P_{14}$

$r_{128,14,2} \ = \ -ci_{2,2} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_3\rangle = r_{128,14,3} P_{14}$

$r_{128,14,3} \ = \ -ci_{3,2} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_7\rangle = r_{128,2,7} P_2 + r_{128,3,7} P_3$

$r_{128,2,7} \ = \ -1.0 * inv_{3,2}$

$r_{128,3,7} \ = \ -1.0 * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{129} : \langle P_p | \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_0\rangle = r_{129,8,0} P_8$

$r_{129,8,0} \ = \ ci_{0,0}$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_1\rangle = r_{129,8,1} P_8$

$r_{129,8,1} \ = \ ci_{1,0}$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle = r_{129,0,13} P_0 + r_{129,1,13} P_1$

$r_{129,0,13} \ = \ inv_{1,0}$

$r_{129,1,13} \ = \ inv_{1,1}$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{130} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_0\rangle = r_{130,11,0} P_{11}$

$r_{130,11,0} \ = \ ci_{0,0}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_1\rangle = r_{130,11,1} P_{11}$

$r_{130,11,1} \ = \ ci_{1,0}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_5\rangle = r_{130,14,5} P_{14}$

$r_{130,14,5} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_9\rangle = r_{130,2,9} P_2 + r_{130,3,9} P_3$

$r_{130,2,9} \ = \ -1.0 * inv_{3,2}$

$r_{130,3,9} \ = \ -1.0 * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{13}\rangle = r_{130,15,13} P_{15}$

$r_{130,15,13} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{131} : \langle P_p | \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{132} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_0\rangle = r_{132,14,0} P_{14}$

$r_{132,14,0} \ = \ -ci_{0,1} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_1\rangle = r_{132,14,1} P_{14}$

$r_{132,14,1} \ = \ -ci_{1,1} * 1$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_4\rangle = r_{132,11,4} P_{11}$

$r_{132,11,4} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_8\rangle = r_{132,2,8} P_2 + r_{132,3,8} P_3$

$r_{132,2,8} \ = \ -1.0 * inv_{3,2}$

$r_{132,3,8} \ = \ -1.0 * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_{12}\rangle = r_{132,15,12} P_{15}$

$r_{132,15,12} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{133} : \langle P_p | \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_2\rangle = r_{133,8,2} P_8$

$r_{133,8,2} \ = \ -ci_{2,3} * 1$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_3\rangle = r_{133,8,3} P_8$

$r_{133,8,3} \ = \ -ci_{3,3} * 1$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle = r_{133,4,11} P_4$

$r_{133,4,11} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{133,0,14} P_0 + r_{133,1,14} P_1$

$r_{133,0,14} \ = \ -1.0 * inv_{1,0}$

$r_{133,1,14} \ = \ -1.0 * inv_{1,1}$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle = r_{133,12,15} P_{12}$

$r_{133,12,15} \ = \ 1.0$

$\hat{O}_{134} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_2\rangle = r_{134,11,2} P_{11}$

$r_{134,11,2} \ = \ ci_{2,2}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_3\rangle = r_{134,11,3} P_{11}$

$r_{134,11,3} \ = \ ci_{3,2}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{10}\rangle = r_{134,2,10} P_2 + r_{134,3,10} P_3$

$r_{134,2,10} \ = \ -1.0 * inv_{3,2}$

$r_{134,3,10} \ = \ -1.0 * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{135} : \langle P_p | \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_5\rangle = r_{135,8,5} P_8$

$r_{135,8,5} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{13}\rangle = r_{135,4,13} P_4$

$r_{135,4,13} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{136} : \langle P_p|\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_q\rangle =>$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_0\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_1\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_2\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_3\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_4\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_5\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_6\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_7\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_8\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_9\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_{10}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_{11}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_{12}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_{13}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{137} : \langle P_p|\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_q\rangle =>$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_0\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_1\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_2\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_3\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_4\rangle = r_{137,8,4}P_8$

$r_{137,8,4} \ = \ 1$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_5\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_6\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_7\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle = r_{137,2,11} P_2 + r_{137,3,11} P_3$

$r_{137,2,11} \ = \ inv_{3,2}$

$r_{137,3,11} \ = \ inv_{3,3}$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle = r_{137,0,12} P_0 + r_{137,1,12} P_1$

$r_{137,0,12} \ = \ inv_{1,0}$

$r_{137,1,12} \ = \ inv_{1,1}$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle = r_{137,14,15} P_{14}$

$r_{137,14,15} \ = \ 1.0$

$\hat{O}_{138} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{0}_\beta^-|P_{15}\rangle =$

$\hat{O}_{139} : \langle P_p|\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_q\rangle =>$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_0\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_1\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_2\rangle = r_{139,8,2}P_8$

$r_{139,8,2} = ci_{2,3}$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_3\rangle = r_{139,8,3}P_8$

$r_{139,8,3} = ci_{3,3}$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_4\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_5\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_6\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_7\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_8\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_9\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{10}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{11}\rangle = r_{139,4,11}P_4$

$r_{139,4,11} = -1.0$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{12}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{13}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{14}\rangle = r_{139,0,14}P_0 + r_{139,1,14}P_1$

$r_{139,0,14} = inv_{1,0}$

$r_{139,1,14} = inv_{1,1}$

$\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{15}\rangle = r_{139,12,15}P_{12}$

$r_{139,12,15} = -1.0$

$\hat{O}_{140} : \langle P_p|\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-|P_q\rangle =>$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-|P_0\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-|P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{141} : \langle P_p | \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{142} : \langle P_p|\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_0\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_1\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_2\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_3\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_5\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{10}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{143} : \langle P_p|\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_0\rangle = r_{143,8,0}P_8$

$r_{143,8,0} \ = \ -ci_{0,1} * 1$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_1\rangle = r_{143,8,1}P_8$

$r_{143,8,1} \ = \ -ci_{1,1} * 1$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_2\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle = r_{143,4,12} P_4$

$r_{143,4,12} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle = r_{143,2,14} P_2 + r_{143,3,14} P_3$

$r_{143,2,14} \ = \ inv_{3,2}$

$r_{143,3,14} \ = \ inv_{3,3}$

$\hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle = r_{143,11,15} P_{11}$

$r_{143,11,15} \ = \ -1.0$

$\hat{O}_{144} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_0\rangle = r_{144,14,0} P_{14}$

$r_{144,14,0} \ = \ ci_{0,0}$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_1\rangle = r_{144,14,1} P_{14}$

$r_{144,14,1} \ = \ ci_{1,0}$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_7\rangle = r_{144,0,7} P_0 + r_{144,1,7} P_1$

$r_{144,0,7} \ = \ inv_{1,0}$

$r_{144,1,7} = inv_{1,1}$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{145} : \langle P_p | \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_2\rangle = r_{145,8,2} P_8$

$r_{145,8,2} = ci_{2,2}$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_3\rangle = r_{145,8,3} P_8$

$r_{145,8,3} = ci_{3,2}$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle = r_{145,2,13} P_2 + r_{145,3,13} P_3$

$r_{145,2,13} = inv_{3,2}$

$r_{145,3,13} = inv_{3,3}$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{146} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_0\rangle = r_{146,12,0} P_{12}$

$r_{146,12,0} \ = \ -ci_{0,0} * 1$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_1\rangle = r_{146,12,1} P_{12}$

$r_{146,12,1} \ = \ -ci_{1,0} * 1$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_9\rangle = r_{146,0,9} P_0 + r_{146,1,9} P_1$

$r_{146,0,9} \ = \ inv_{1,0}$

$r_{146,1,9} \ = \ inv_{1,1}$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{147} : \langle P_p | \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_5\rangle = r_{147,8,5} P_8$

$r_{147,8,5} \ = \ 1$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{13}\rangle = r_{147,4,13} P_4$

$r_{147,4,13} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{148} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_2\rangle = r_{148,14,2} P_{14}$

$r_{148,14,2} \ = \ -ci_{2,3} * 1$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_3\rangle = r_{148,14,3} P_{14}$

$r_{148,14,3} \ = \ -ci_{3,3} * 1$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_4\rangle = r_{148,12,4} P_{12}$

$r_{148,12,4} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_8\rangle = r_{148,0,8} P_0 + r_{148,1,8} P_1$

$r_{148,0,8} = inv_{1,0}$

$r_{148,1,8} = inv_{1,1}$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_{11}\rangle = r_{148,15,11} P_{15}$

$r_{148,15,11} = 1$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{149} : \langle P_p | \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_0\rangle = r_{149,8,0} P_8$

$r_{149,8,0} = ci_{0,1}$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_1\rangle = r_{149,8,1} P_8$

$r_{149,8,1} = ci_{1,1}$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle = r_{149,4,12} P_4$

$r_{149,4,12} = -1.0$

$\hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{14}\rangle = r_{149,2,14}P_2 + r_{149,3,14}P_3$

$r_{149,2,14} \;=\; -1.0 * inv_{3,2}$

$r_{149,3,14} \;=\; -1.0 * inv_{3,3}$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{15}\rangle = r_{149,11,15}P_{11}$

$r_{149,11,15} \;=\; 1$

$\hat{O}_{150} : \langle P_p|\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_0\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_1\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_2\rangle = r_{150,12,2}P_{12}$

$r_{150,12,2} \;=\; -ci_{2,2} * 1$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_3\rangle = r_{150,12,3}P_{12}$

$r_{150,12,3} \;=\; -ci_{3,2} * 1$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_5\rangle = r_{150,14,5}P_{14}$

$r_{150,14,5} \;=\; -1.0$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_{10}\rangle = r_{150,0,10}P_0 + r_{150,1,10}P_1$

$r_{150,0,10} \;=\; inv_{1,0}$

$r_{150,1,10} \;=\; inv_{1,1}$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_{13}\rangle = r_{150,15,13}P_{15}$

$r_{150,15,13} \;=\; 1$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{151} : \langle P_p|\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_q\rangle =>$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_0\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_1\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_2\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_3\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_4\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_5\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_6\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_7\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_8\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_9\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_{10}\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_{11}\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_{12}\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_{13}\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_{14}\rangle =$

$\hat{1}^+_\alpha\hat{1}^-_\beta\hat{1}^-_\beta|P_{15}\rangle =$

$\hat{O}_{152} : \langle P_p|\hat{1}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\alpha|P_q\rangle =>$

$\hat{1}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\alpha|P_0\rangle = r_{152,13,0}P_{13}$

$r_{152,13,0} \;=\; ci_{0,0}$

$\hat{1}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\alpha|P_1\rangle = r_{152,13,1}P_{13}$

$r_{152,13,1} \;=\; ci_{1,0}$

$\hat{1}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\alpha|P_2\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\alpha|P_3\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\alpha|P_4\rangle = r_{152,12,4}P_{12}$

$r_{152,12,4} \;=\; 1$

$\hat{1}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\alpha|P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha |P_7\rangle = r_{152,2,7} P_2 + r_{152,3,7} P_3$

$r_{152,2,7} \ = \ -1.0 * inv_{2,2}$

$r_{152,3,7} \ = \ -1.0 * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{11}\rangle = r_{152,15,11} P_{15}$

$r_{152,15,11} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{153} : \langle P_p | \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{154} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_2\rangle = r_{154,12,2} P_{12}$

$r_{154,12,2} \ = \ ci_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_3\rangle = r_{154,12,3} P_{12}$

$r_{154,12,3} \ = \ ci_{3,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_9\rangle = r_{154,2,9} P_2 + r_{154,3,9} P_3$

$r_{154,2,9} \ = \ -1.0 * inv_{2,2}$

$r_{154,3,9} \ = \ -1.0 * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{155} : \langle P_p | \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{155,10,0} P_{10}$

$r_{155,10,0} \ = \ -ci_{0,0} * 1$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_1\rangle = r_{155,10,1} P_{10}$

$r_{155,10,1} = -ci_{1,0} * 1$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle = r_{155,0,11} P_0 + r_{155,1,11} P_1$

$r_{155,0,11} = inv_{1,0}$

$r_{155,1,11} = inv_{1,1}$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{156} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_2\rangle = r_{156,13,2} P_{13}$

$r_{156,13,2} = -ci_{2,3} * 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_3\rangle = r_{156,13,3} P_{13}$

$r_{156,13,3} = -ci_{3,3} * 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_8\rangle = r_{156,2,8} P_2 + r_{156,3,8} P_3$

$r_{156,2,8} \;=\; -1.0 * inv_{2,2}$

$r_{156,3,8} \;=\; -1.0 * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{157} : \langle P_p | \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_4\rangle = r_{157,10,4} P_{10}$

$r_{157,10,4} \;=\; -1.0$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle = r_{157,5,11} P_5$

$r_{157,5,11} \;=\; -1.0$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{158} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_0\rangle = r_{158,12,0} P_{12}$

$r_{158,12,0} \ = \ -ci_{0,1} * 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_1\rangle = r_{158,12,1} P_{12}$

$r_{158,12,1} \ = \ -ci_{1,1} * 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_5\rangle = r_{158,13,5} P_{13}$

$r_{158,13,5} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_{10}\rangle = r_{158,2,10} P_2 + r_{158,3,10} P_3$

$r_{158,2,10} \ = \ -1.0 * inv_{2,2}$

$r_{158,3,10} \ = \ -1.0 * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_{14}\rangle = r_{158,15,14} P_{15}$

$r_{158,15,14} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{159} : \langle P_p | \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_2\rangle = r_{159,10,2} P_{10}$

$r_{159,10,2} \ = \ -ci_{2,2} * 1$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_3\rangle = r_{159,10,3} P_{10}$

$r_{159,10,3} \ = \ -ci_{3,2} * 1$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle = r_{159,0,12} P_0 + r_{159,1,12} P_1$

$r_{159,0,12} \ = \ -1.0 * inv_{1,0}$

$r_{159,1,12} \ = \ -1.0 * inv_{1,1}$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle = r_{159,5,13} P_5$

$r_{159,5,13} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle = r_{159,14,15} P_{14}$

$r_{159,14,15} \ = \ -1.0$

$\hat{O}_{160} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_4\rangle = r_{160,14,4} P_{14}$

$r_{160,14,4} \ = \ 1$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_7\rangle = r_{160,5,7} P_5$

$r_{160,5,7} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{161} : \langle P_p | \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_0\rangle = r_{161,10,0} P_{10}$

$r_{161,10,0} \ = \ ci_{0,0}$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_1\rangle = r_{161,10,1} P_{10}$

$r_{161,10,1} \ = \ ci_{1,0}$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle = r_{161,0,11} P_0 + r_{161,1,11} P_1$

$r_{161,0,11} \ = \ -1.0 * inv_{1,0}$

$r_{161,1,11} \ = \ -1.0 * inv_{1,1}$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{162} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_0\rangle = r_{162,13,0} P_{13}$

$r_{162,13,0} \ = \ ci_{0,0}$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_1\rangle = r_{162,13,1} P_{13}$

$r_{162,13,1} \ = \ ci_{1,0}$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_2\rangle = r_{162,14,2} P_{14}$

$r_{162,14,2} \ = \ ci_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_3\rangle = r_{162,14,3} P_{14}$

$r_{162,14,3} \ = \ ci_{3,3}$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_9\rangle = r_{162,5,9} P_5$

$r_{162,5,9} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_{11}\rangle = r_{162,15,11} P_{15}$

$r_{162,15,11} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{163} : \langle P_p|\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_q\rangle =>$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_0\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_1\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_2\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_3\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_4\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_5\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_6\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_7\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_8\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_9\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_{10}\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_{11}\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_{12}\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_{13}\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_{14}\rangle =$

$\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\beta|P_{15}\rangle =$

$\hat{O}_{164} : \langle P_p|\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha|P_q\rangle =>$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha|P_0\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha|P_1\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha|P_2\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha|P_3\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha|P_4\rangle = r_{164,13,4}P_{13}$

$r_{164,13,4} \ = \ 1.0$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha|P_5\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha|P_6\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha|P_7\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha|P_8\rangle = r_{164,5,8}P_5$

$r_{164,5,8} = -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{165} : \langle P_p | \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_2\rangle = r_{165,10,2} P_{10}$

$r_{165,10,2} = -ci_{2,3} * 1$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_3\rangle = r_{165,10,3} P_{10}$

$r_{165,10,3} = -ci_{3,3} * 1$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle = r_{165,2,11} P_2 + r_{165,3,11} P_3$

$r_{165,2,11} = inv_{2,2}$

$r_{165,3,11} = inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{166} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_0\rangle = r_{166,14,0} P_{14}$

$r_{166,14,0} \ = \ -ci_{0,1} * 1$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_1\rangle = r_{166,14,1} P_{14}$

$r_{166,14,1} \ = \ -ci_{1,1} * 1$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_2\rangle = r_{166,13,2} P_{13}$

$r_{166,13,2} \ = \ ci_{2,2}$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_3\rangle = r_{166,13,3} P_{13}$

$r_{166,13,3} \ = \ ci_{3,2}$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{10}\rangle = r_{166,5,10} P_5$

$r_{166,5,10} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{12}\rangle = r_{166,15,12} P_{15}$

$r_{166,15,12} \ = \ 1$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{167} : \langle P_p | \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_5\rangle = r_{167,10,5} P_{10}$

$r_{167,10,5} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{13}\rangle = r_{167,2,13} P_2 + r_{167,3,13} P_3$

$r_{167,2,13} \ = \ inv_{2,2}$

$r_{167,3,13} \ = \ inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{14}\rangle = r_{167,0,14} P_0 + r_{167,1,14} P_1$

$r_{167,0,14} \ = \ -1.0 * inv_{1,0}$

$r_{167,1,14} \ = \ -1.0 * inv_{1,1}$

$\hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{15}\rangle = r_{167,12,15} P_{12}$

$r_{167,12,15} \ = \ 1$

$\hat{O}_{168} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_0\rangle = r_{168,14,0} P_{14}$

$r_{168,14,0} \ = \ -ci_{0,0} * 1$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_1\rangle = r_{168,14,1} P_{14}$

$r_{168,14,1} \ = \ -ci_{1,0} * 1$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_5\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_6\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_7\rangle = r_{168,0,7}P_0 + r_{168,1,7}P_1$

$r_{168,0,7} \ = \ -1.0 * inv_{1,0}$

$r_{168,1,7} \ = \ -1.0 * inv_{1,1}$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_8\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_9\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_{10}\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_{11}\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_{12}\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_{13}\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_{14}\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{+}_{\alpha}\hat{0}^{-}_{\alpha}|P_{15}\rangle =$

$\hat{O}_{169} : \langle P_p|\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_q\rangle =>$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_0\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_1\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_2\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_3\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_4\rangle = r_{169,10,4}P_{10}$

$r_{169,10,4} \ = \ 1$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_5\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_6\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_7\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_8\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_9\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_{10}\rangle =$

$\hat{1}^{+}_{\beta}\hat{1}^{-}_{\alpha}\hat{0}^{-}_{\alpha}|P_{11}\rangle = r_{169,5,11}P_5$

$r_{169,5,11} \ = \ 1.0$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{170} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_0\rangle = r_{170,12,0} P_{12}$

$r_{170,12,0} \ = \ ci_{0,0}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_1\rangle = r_{170,12,1} P_{12}$

$r_{170,12,1} \ = \ ci_{1,0}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_9\rangle = r_{170,0,9} P_0 + r_{170,1,9} P_1$

$r_{170,0,9} \ = \ -1.0 * inv_{1,0}$

$r_{170,1,9} \ = \ -1.0 * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{171} : \langle P_p | \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_2\rangle = r_{171,10,2} P_{10}$

$r_{171,10,2} \ = \ ci_{2,3}$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_3\rangle = r_{171,10,3} P_{10}$

$r_{171,10,3} \ = \ ci_{3,3}$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle = r_{171,2,11} P_2 + r_{171,3,11} P_3$

$r_{171,2,11} \ = \ -1.0 * inv_{2,2}$

$r_{171,3,11} \ = \ -1.0 * inv_{2,3}$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{172} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_2\rangle = r_{172,14,2} P_{14}$

$r_{172,14,2} \ = \ ci_{2,3}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_3\rangle = r_{172,14,3} P_{14}$

$r_{172,14,3} \ = \ ci_{3,3}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_4\rangle = r_{172,12,4} P_{12}$

$r_{172,12,4} \ = \ 1.0$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_8\rangle = r_{172,0,8} P_0 + r_{172,1,8} P_1$

$r_{172,0,8} \ = \ -1.0 * inv_{1,0}$

$r_{172,1,8} \ = \ -1.0 * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{11}\rangle = r_{172,15,11} P_{15}$

$r_{172,15,11} \ = \ -1.0$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{173} : \langle P_p | \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{174} : \langle P_p|\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{0}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{1}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{2}\rangle = r_{174,12,2}P_{12}$

$r_{174,12,2} \ = \ ci_{2,2}$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{3}\rangle = r_{174,12,3}P_{12}$

$r_{174,12,3} \ = \ ci_{3,2}$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{4}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{5}\rangle = r_{174,14,5}P_{14}$

$r_{174,14,5} \ = \ 1.0$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{6}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{7}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{8}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{9}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{10}\rangle = r_{174,0,10}P_{0} + r_{174,1,10}P_{1}$

$r_{174,0,10} \ = \ -1.0 * inv_{1,0}$

$r_{174,1,10} \ = \ -1.0 * inv_{1,1}$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{13}\rangle = r_{174,15,13}P_{15}$

$r_{174,15,13} \ = \ -1.0$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{175} : \langle P_p|\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_0\rangle = r_{175,10,0} P_{10}$

$r_{175,10,0} \ = \ -ci_{0,1} * 1$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_1\rangle = r_{175,10,1} P_{10}$

$r_{175,10,1} \ = \ -ci_{1,1} * 1$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle = r_{175,2,12} P_2 + r_{175,3,12} P_3$

$r_{175,2,12} \ = \ inv_{2,2}$

$r_{175,3,12} \ = \ inv_{2,3}$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle = r_{175,5,14} P_5$

$r_{175,5,14} \ = \ 1.0$

$\hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle = r_{175,13,15} P_{13}$

$r_{175,13,15} \ = \ -1.0$

$\hat{O}_{176} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_5\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_6\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_7\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_8\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_9\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{177} : \langle P_p|\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_q\rangle =>$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_0\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_1\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_2\rangle = r_{177,10,2}P_{10}$

$r_{177,10,2} \ = \ ci_{2,2}$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_3\rangle = r_{177,10,3}P_{10}$

$r_{177,10,3} \ = \ ci_{3,2}$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_4\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_5\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_6\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_7\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_8\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_9\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\alpha}^{-}|P_{12}\rangle = r_{177,0,12}P_0 + r_{177,1,12}P_1$

$r_{177,0,12} \ = \ inv_{1,0}$

$r_{177,1,12} \ = \ inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle = r_{177,5,13} P_5$

$r_{177,5,13} \ = \ 1.0$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle = r_{177,14,15} P_{14}$

$r_{177,14,15} \ = \ 1$

$\hat{O}_{178} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{179} : \langle P_p | \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_5\rangle = r_{179,10,5} P_{10}$

$r_{179,10,5} \ = \ 1$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{13}\rangle = r_{179,2,13} P_2 + r_{179,3,13} P_3$

$r_{179,2,13} \ = \ -1.0 * inv_{2,2}$

$r_{179,3,13} \ = \ -1.0 * inv_{2,3}$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{14}\rangle = r_{179,0,14} P_0 + r_{179,1,14} P_1$

$r_{179,0,14} \ = \ inv_{1,0}$

$r_{179,1,14} \ = \ inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{15}\rangle = r_{179,12,15} P_{12}$

$r_{179,12,15} \ = \ -1.0$

$\hat{O}_{180} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{181} : \langle P_p | \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_0\rangle = r_{181,10,0} P_{10}$

$r_{181,10,0} \ = \ ci_{0,1}$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_1\rangle = r_{181,10,1} P_{10}$

$r_{181,10,1} \ = \ ci_{1,1}$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle = r_{181,2,12} P_2 + r_{181,3,12} P_3$

$r_{181,2,12} \ = \ -1.0 * inv_{2,2}$

$r_{181,3,12} \ = \ -1.0 * inv_{2,3}$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{181,5,14} P_5$

$r_{181,5,14} \ = \ -1.0$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle = r_{181,13,15} P_{13}$

$r_{181,13,15} \ = \ 1$

$\hat{O}_{182} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{183} : \langle P_p | \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{184} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{185} : \langle P_p|\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_2\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{186} : \langle P_p|\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_2\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\beta^-|P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{187} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{188} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{189} : \langle P_p|\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_2\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{190} : \langle P_p|\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_2\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_{15}\rangle =$

$\hat{O}_{191} : \langle P_p|\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{1}_\beta^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{1}_\beta^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{1}_\beta^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{1}_\beta^-|P_2\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{1}_\beta^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{1}_\beta^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{1}_\beta^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{0}_\alpha^+\hat{1}_\beta^-\hat{1}_\beta^-|P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{192} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{192,0,0} P_0 + r_{192,1,0} P_1$

$r_{192,0,0} \;=\; -ci_{0,0} * inv_{0,0}$

$r_{192,1,0} \;=\; -ci_{0,0} * inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_1\rangle = r_{192,0,1} P_0 + r_{192,1,1} P_1$

$r_{192,0,1} \;=\; -ci_{1,0} * inv_{0,0}$

$r_{192,1,1} \;=\; -ci_{1,0} * inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle = r_{192,11,11} P_{11}$

$r_{192,11,11} \;=\; -1.0$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle = r_{192,13,13} P_{13}$

$r_{192,13,13} \ = \ -1.0$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle = r_{192,15,15} P_{15}$

$r_{192,15,15} \ = \ -1.0$

$\hat{O}_{193} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_2\rangle = r_{193,0,2} P_0 + r_{193,1,2} P_1$

$r_{193,0,2} \ = \ -ci_{2,2} * inv_{0,0}$

$r_{193,1,2} \ = \ -ci_{2,2} * inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_3\rangle = r_{193,0,3} P_0 + r_{193,1,3} P_1$

$r_{193,0,3} \ = \ -ci_{3,2} * inv_{0,0}$

$r_{193,1,3} \ = \ -ci_{3,2} * inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle = r_{193,11,12} P_{11}$

$r_{193,11,12} \ = \ 1$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{194} : \langle P_p|\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_0\rangle = r_{194,0,0}P_0 + r_{194,1,0}P_1$

$r_{194,0,0} \;=\; ci_{0,0} * inv_{0,0}$

$r_{194,1,0} \;=\; ci_{0,0} * inv_{0,1}$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_1\rangle = r_{194,0,1}P_0 + r_{194,1,1}P_1$

$r_{194,0,1} \;=\; ci_{1,0} * inv_{0,0}$

$r_{194,1,1} \;=\; ci_{1,0} * inv_{0,1}$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_2\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_3\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_4\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_5\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_6\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_7\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_8\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_9\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_{10}\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_{11}\rangle = r_{194,11,11}P_{11}$

$r_{194,11,11} \;=\; 1$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_{12}\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_{13}\rangle = r_{194,13,13}P_{13}$

$r_{194,13,13} \;=\; 1$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_{14}\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_{15}\rangle = r_{194,15,15}P_{15}$

$r_{194,15,15} \;=\; 1$

$\hat{O}_{195} : \langle P_p|\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\alpha|P_0\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\alpha|P_1\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\alpha|P_2\rangle = r_{195,0,2}P_0 + r_{195,1,2}P_1$

$r_{195,0,2} = -ci_{2,3} * inv_{0,0}$

$r_{195,1,2} = -ci_{2,3} * inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_3\rangle = r_{195,0,3} P_0 + r_{195,1,3} P_1$

$r_{195,0,3} = -ci_{3,3} * inv_{0,0}$

$r_{195,1,3} = -ci_{3,3} * inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{195,13,14} P_{13}$

$r_{195,13,14} = -1.0$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{196} : \langle P_p | \hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_2\rangle = r_{196,0,2} P_0 + r_{196,1,2} P_1$

$r_{196,0,2} = ci_{2,3} * inv_{0,0}$

$r_{196,1,2} = ci_{2,3} * inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_3\rangle = r_{196,0,3} P_0 + r_{196,1,3} P_1$

$r_{196,0,3} = ci_{3,3} * inv_{0,0}$

$r_{196,1,3} = ci_{3,3} * inv_{0,1}$

$\hat{0}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{14}\rangle = r_{196,13,14}P_{13}$

$r_{196,13,14} \ = \ 1$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{15}\rangle =$

$\hat{O}_{197} : \langle P_p|\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_0\rangle = r_{197,0,0}P_0 + r_{197,1,0}P_1$

$r_{197,0,0} \ = \ -ci_{0,1} * inv_{0,0}$

$r_{197,1,0} \ = \ -ci_{0,1} * inv_{0,1}$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_1\rangle = r_{197,0,1}P_0 + r_{197,1,1}P_1$

$r_{197,0,1} \ = \ -ci_{1,1} * inv_{0,0}$

$r_{197,1,1} \ = \ -ci_{1,1} * inv_{0,1}$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_2\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{15}\rangle =$

$\hat{O}_{198} : \langle P_p|\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_2\rangle = r_{198,0,2}P_0 + r_{198,1,2}P_1$

$r_{198,0,2} \ = \ ci_{2,2} * inv_{0,0}$

$r_{198,1,2} \ = \ ci_{2,2} * inv_{0,1}$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_3\rangle = r_{198,0,3}P_0 + r_{198,1,3}P_1$

$r_{198,0,3} \ = \ ci_{3,2} * inv_{0,0}$

$r_{198,1,3} \ = \ ci_{3,2} * inv_{0,1}$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{12}\rangle = r_{198,11,12}P_{11}$

$r_{198,11,12} \ = \ -1.0$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{0}_\beta^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{199} : \langle P_p|\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_0\rangle = r_{199,0,0}P_0 + r_{199,1,0}P_1$

$r_{199,0,0} \;=\; ci_{0,1} * inv_{0,0}$

$r_{199,1,0} \;=\; ci_{0,1} * inv_{0,1}$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_1\rangle = r_{199,0,1}P_0 + r_{199,1,1}P_1$

$r_{199,0,1} \;=\; ci_{1,1} * inv_{0,0}$

$r_{199,1,1} \;=\; ci_{1,1} * inv_{0,1}$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_2\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_3\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_4\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_5\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_6\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_7\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_8\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_9\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_{10}\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_{11}\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_{12}\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_{13}\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_{14}\rangle =$

$\hat{0}^+_\alpha\hat{0}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_{15}\rangle =$

$\hat{O}_{200} : \langle P_p|\hat{0}^+_\alpha\hat{1}^+_\alpha\hat{0}^-_\alpha\hat{0}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\alpha\hat{1}^+_\alpha\hat{0}^-_\alpha\hat{0}^-_\alpha|P_0\rangle =$

$\hat{0}^+_\alpha\hat{1}^+_\alpha\hat{0}^-_\alpha\hat{0}^-_\alpha|P_1\rangle =$

$\hat{0}^+_\alpha\hat{1}^+_\alpha\hat{0}^-_\alpha\hat{0}^-_\alpha|P_2\rangle =$

$\hat{0}^+_\alpha\hat{1}^+_\alpha\hat{0}^-_\alpha\hat{0}^-_\alpha|P_3\rangle =$

$\hat{0}^+_\alpha\hat{1}^+_\alpha\hat{0}^-_\alpha\hat{0}^-_\alpha|P_4\rangle =$

$\hat{0}^+_\alpha\hat{1}^+_\alpha\hat{0}^-_\alpha\hat{0}^-_\alpha|P_5\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{0}_\alpha^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{0}_\alpha^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{0}_\alpha^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{0}_\alpha^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{0}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{0}_\alpha^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{0}_\alpha^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{0}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{0}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{201} : \langle P_p|\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_2\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_4\rangle = r_{201,4,4}P_4$

$r_{201,4,4} = -1.0$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{11}\rangle = r_{201,11,11}P_{11}$

$r_{201,11,11} = -1.0$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{12}\rangle = r_{201,12,12}P_{12}$

$r_{201,12,12} = -1.0$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{1}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{1}_\alpha^- |P_{15}\rangle = r_{201,15,15} P_{15}$

$r_{201,15,15} \ = \ -1.0$

$\hat{O}_{202} : \langle P_p | \hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- | P_q \rangle =>$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_0\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_1\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_2\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_3\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_4\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_5\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_6\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_7\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_8\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_9\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_{10}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_{11}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_{12}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_{13}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_{14}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\beta^- |P_{15}\rangle =$

$\hat{O}_{203} : \langle P_p | \hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\beta^- | P_q \rangle =>$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\beta^- |P_0\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\beta^- |P_1\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\beta^- |P_2\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\beta^- |P_3\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\beta^- |P_4\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\beta^- |P_5\rangle = r_{203,4,5} P_4$

$r_{203,4,5} \ = \ -1.0$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{204} : \langle P_p | \hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_4\rangle = r_{204,4,4} P_4$

$r_{204,4,4} \ = \ 1$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle = r_{204,11,11} P_{11}$

$r_{204,11,11} \ = \ 1.0$

$\hat{0}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle = r_{204,12,12} P_{12}$

$r_{204,12,12} \ = \ 1$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{15}\rangle = r_{204,15,15}P_{15}$

$r_{204,15,15} \ = \ 1.0$

$\hat{O}_{205} : \langle P_p|\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_2\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{11}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{206} : \langle P_p|\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_2\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\beta^-|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_5\rangle = r_{206,4,5}P_4$

$r_{206,4,5} \ = \ 1$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{207} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_0\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_1\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_2\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_3\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{1}_\beta^-|P_{15}\rangle =$

$\hat{O}_{208} : \langle P_p|\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_0\rangle = r_{208,2,0}P_2 + r_{208,3,0}P_3$

$r_{208,2,0} = -ci_{0,0} * inv_{2,2}$

$r_{208,3,0} = -ci_{0,0} * inv_{2,3}$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_1\rangle = r_{208,2,1}P_2 + r_{208,3,1}P_3$

$r_{208,2,1} = -ci_{1,0} * inv_{2,2}$

$r_{208,3,1} = -ci_{1,0} * inv_{2,3}$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_2\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{11}\rangle = r_{208,12,11}P_{12}$

$r_{208,12,11} = 1.0$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{15}\rangle =$

$\hat{O}_{209} : \langle P_p|\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_2\rangle = r_{209,2,2}P_2 + r_{209,3,2}P_3$

$r_{209,2,2} = -ci_{2,2} * inv_{2,2}$

$r_{209,3,2} = -ci_{2,2} * inv_{2,3}$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_3\rangle = r_{209,2,3} P_2 + r_{209,3,3} P_3$

$r_{209,2,3} = -ci_{3,2} * inv_{2,2}$

$r_{209,3,3} = -ci_{3,2} * inv_{2,3}$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle = r_{209,12,12} P_{12}$

$r_{209,12,12} = -1.0$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle = r_{209,13,13} P_{13}$

$r_{209,13,13} = -1.0$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle = r_{209,15,15} P_{15}$

$r_{209,15,15} = -1.0$

$\hat{O}_{210} : \langle P_p | \hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_0\rangle = r_{210,2,0} P_2 + r_{210,3,0} P_3$

$r_{210,2,0} = ci_{0,0} * inv_{2,2}$

$r_{210,3,0} = ci_{0,0} * inv_{2,3}$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_1\rangle = r_{210,2,1} P_2 + r_{210,3,1} P_3$

$r_{210,2,1} = ci_{1,0} * inv_{2,2}$

$r_{210,3,1} = ci_{1,0} * inv_{2,3}$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_3\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_8\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_9\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{11}\rangle = r_{210,12,11}P_{12}$

$r_{210,12,11} \;=\; -1.0$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{12}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{211} : \langle P_p|\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_q\rangle =>$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_0\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_1\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_2\rangle = r_{211,2,2}P_2 + r_{211,3,2}P_3$

$r_{211,2,2} \;=\; -ci_{2,3} * inv_{2,2}$

$r_{211,3,2} \;=\; -ci_{2,3} * inv_{2,3}$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_3\rangle = r_{211,2,3}P_2 + r_{211,3,3}P_3$

$r_{211,2,3} \;=\; -ci_{3,3} * inv_{2,2}$

$r_{211,3,3} \;=\; -ci_{3,3} * inv_{2,3}$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_4\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_5\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_6\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_7\rangle =$

$\hat{0}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\beta}^{-}\hat{1}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{212} : \langle P_p|\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_0\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_1\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_2\rangle = r_{212,2,2}P_2 + r_{212,3,2}P_3$

$r_{212,2,2} \;=\; ci_{2,3} * inv_{2,2}$

$r_{212,3,2} \;=\; ci_{2,3} * inv_{2,3}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_3\rangle = r_{212,2,3}P_2 + r_{212,3,3}P_3$

$r_{212,2,3} \;=\; ci_{3,3} * inv_{2,2}$

$r_{212,3,3} \;=\; ci_{3,3} * inv_{2,3}$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_5\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{13}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{14}\rangle =$

$\hat{0}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{213} : \langle P_p|\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_q\rangle =>$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_0\rangle = r_{213,2,0}P_2 + r_{213,3,0}P_3$

$r_{213,2,0} \;=\; -ci_{0,1} * inv_{2,2}$

$r_{213,3,0} \;=\; -ci_{0,1} * inv_{2,3}$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_1\rangle = r_{213,2,1}P_2 + r_{213,3,1}P_3$

$r_{213,2,1} \;=\; -ci_{1,1} * inv_{2,2}$

$r_{213,3,1} \;=\; -ci_{1,1} * inv_{2,3}$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_2\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_3\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_4\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_5\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_6\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_8\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_9\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_{14}\rangle = r_{213,13,14}P_{13}$

$r_{213,13,14} \;=\; 1.0$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta|P_{15}\rangle =$

$\hat{O}_{214} : \langle P_p|\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha|P_0\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha|P_1\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha|P_2\rangle = r_{214,2,2}P_2 + r_{214,3,2}P_3$

$r_{214,2,2} \;=\; ci_{2,2} * inv_{2,2}$

$r_{214,3,2} = ci_{2,2} * inv_{2,3}$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_3\rangle = r_{214,2,3} P_2 + r_{214,3,3} P_3$

$r_{214,2,3} = ci_{3,2} * inv_{2,2}$

$r_{214,3,3} = ci_{3,2} * inv_{2,3}$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_4\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_5\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_6\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_7\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_8\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_9\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_{11}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_{12}\rangle = r_{214,12,12} P_{12}$

$r_{214,12,12} = 1.0$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_{13}\rangle = r_{214,13,13} P_{13}$

$r_{214,13,13} = 1.0$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{0}_\alpha^- |P_{15}\rangle = r_{214,15,15} P_{15}$

$r_{214,15,15} = 1$

$\hat{O}_{215} : \langle P_p | \hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{1}_\alpha^- | P_q \rangle =>$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{1}_\alpha^- |P_0\rangle = r_{215,2,0} P_2 + r_{215,3,0} P_3$

$r_{215,2,0} = ci_{0,1} * inv_{2,2}$

$r_{215,3,0} = ci_{0,1} * inv_{2,3}$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{1}_\alpha^- |P_1\rangle = r_{215,2,1} P_2 + r_{215,3,1} P_3$

$r_{215,2,1} = ci_{1,1} * inv_{2,2}$

$r_{215,3,1} = ci_{1,1} * inv_{2,3}$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{1}_\alpha^- |P_2\rangle =$

$\hat{0}_\alpha^+ \hat{1}_\beta^+ \hat{1}_{\bar{\beta}}^- \hat{1}_\alpha^- |P_3\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{215,13,14} P_{13}$

$r_{215,13,14} \ = \ -1.0$

$\hat{0}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{216} : \langle P_p | \hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{216,0,0} P_0 + r_{216,1,0} P_1$

$r_{216,0,0} \ = \ ci_{0,0} * inv_{0,0}$

$r_{216,1,0} \ = \ ci_{0,0} * inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_1\rangle = r_{216,0,1} P_0 + r_{216,1,1} P_1$

$r_{216,0,1} \ = \ ci_{1,0} * inv_{0,0}$

$r_{216,1,1} \ = \ ci_{1,0} * inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{10}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{11}\rangle = r_{216,11,11}P_{11}$

$r_{216,11,11} = 1.0$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{12}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{13}\rangle = r_{216,13,13}P_{13}$

$r_{216,13,13} = 1.0$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{14}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{0}_\beta^-|P_{15}\rangle = r_{216,15,15}P_{15}$

$r_{216,15,15} = 1.0$

$\hat{O}_{217} : \langle P_p|\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_q\rangle =>$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_0\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_1\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_2\rangle = r_{217,0,2}P_0 + r_{217,1,2}P_1$

$r_{217,0,2} = ci_{2,2} * inv_{0,0}$

$r_{217,1,2} = ci_{2,2} * inv_{0,1}$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_3\rangle = r_{217,0,3}P_0 + r_{217,1,3}P_1$

$r_{217,0,3} = ci_{3,2} * inv_{0,0}$

$r_{217,1,3} = ci_{3,2} * inv_{0,1}$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_4\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_5\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_6\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_7\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_8\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_9\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{10}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{11}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{12}\rangle = r_{217,11,12}P_{11}$

$r_{217,11,12} = -1.0$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{13}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{14}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\alpha^-\hat{1}_\beta^-|P_{15}\rangle =$

$\hat{O}_{218} : \langle P_p|\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_q\rangle =>$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_0\rangle = r_{218,0,0}P_0 + r_{218,1,0}P_1$

$r_{218,0,0} \ = \ -ci_{0,0} * inv_{0,0}$

$r_{218,1,0} \ = \ -ci_{0,0} * inv_{0,1}$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_1\rangle = r_{218,0,1}P_0 + r_{218,1,1}P_1$

$r_{218,0,1} \ = \ -ci_{1,0} * inv_{0,0}$

$r_{218,1,1} \ = \ -ci_{1,0} * inv_{0,1}$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_2\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_3\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_4\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_5\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_6\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_7\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_8\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_9\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{11}\rangle = r_{218,11,11}P_{11}$

$r_{218,11,11} \ = \ -1.0$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{12}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{13}\rangle = r_{218,13,13}P_{13}$

$r_{218,13,13} \ = \ -1.0$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{0}_\beta^-\hat{0}_\alpha^-|P_{15}\rangle = r_{218,15,15}P_{15}$

$r_{218,15,15} \ = \ -1.0$

$\hat{O}_{219} : \langle P_p|\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_0\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_1\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_2\rangle = r_{219,0,2}P_0 + r_{219,1,2}P_1$

$r_{219,0,2} \ = \ ci_{2,3} * inv_{0,0}$

$r_{219,1,2} \ = \ ci_{2,3} * inv_{0,1}$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_3\rangle = r_{219,0,3}P_0 + r_{219,1,3}P_1$

$r_{219,0,3} \ = \ ci_{3,3} * inv_{0,0}$

$r_{219,1,3} \ = \ ci_{3,3} * inv_{0,1}$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_4\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_5\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_6\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_7\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_8\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_9\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_{10}\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_{11}\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_{12}\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_{13}\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_{14}\rangle = r_{219,13,14}P_{13}$

$r_{219,13,14} \ = \ 1.0$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{0}^-_\beta\hat{1}^-_\alpha|P_{15}\rangle =$

$\hat{O}_{220} : \langle P_p|\hat{0}^+_\beta\hat{0}^+_\alpha\hat{1}^-_\alpha\hat{0}^-_\beta|P_q\rangle =>$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{1}^-_\alpha\hat{0}^-_\beta|P_0\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{1}^-_\alpha\hat{0}^-_\beta|P_1\rangle =$

$\hat{0}^+_\beta\hat{0}^+_\alpha\hat{1}^-_\alpha\hat{0}^-_\beta|P_2\rangle = r_{220,0,2}P_0 + r_{220,1,2}P_1$

$r_{220,0,2} \ = \ -ci_{2,3} * inv_{0,0}$

$r_{220,1,2} \ = \ -ci_{2,3} * inv_{0,1}$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_3\rangle = r_{220,0,3}P_0 + r_{220,1,3}P_1$

$r_{220,0,3} = -ci_{3,3} * inv_{0,0}$

$r_{220,1,3} = -ci_{3,3} * inv_{0,1}$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_4\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_5\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_6\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_7\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_8\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_9\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{10}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{11}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{12}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{13}\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{14}\rangle = r_{220,13,14}P_{13}$

$r_{220,13,14} = -1.0$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{15}\rangle =$

$\hat{O}_{221} : \langle P_p|\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_q\rangle =>$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_0\rangle = r_{221,0,0}P_0 + r_{221,1,0}P_1$

$r_{221,0,0} = ci_{0,1} * inv_{0,0}$

$r_{221,1,0} = ci_{0,1} * inv_{0,1}$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_1\rangle = r_{221,0,1}P_0 + r_{221,1,1}P_1$

$r_{221,0,1} = ci_{1,1} * inv_{0,0}$

$r_{221,1,1} = ci_{1,1} * inv_{0,1}$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_2\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_3\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_4\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_5\rangle =$

$\hat{0}_\beta^+\hat{0}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{222} : \langle P_p | \hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_2\rangle = r_{222,0,2} P_0 + r_{222,1,2} P_1$

$r_{222,0,2} \ = \ -ci_{2,2} * inv_{0,0}$

$r_{222,1,2} \ = \ -ci_{2,2} * inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_3\rangle = r_{222,0,3} P_0 + r_{222,1,3} P_1$

$r_{222,0,3} \ = \ -ci_{3,2} * inv_{0,0}$

$r_{222,1,3} \ = \ -ci_{3,2} * inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle = r_{222,11,12} P_{11}$

$r_{222,11,12} \ = \ 1.0$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{223} : \langle P_p | \hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_0\rangle = r_{223,0,0} P_0 + r_{223,1,0} P_1$

$r_{223,0,0} \ = \ -ci_{0,1} * inv_{0,0}$

$r_{223,1,0} \ = \ -ci_{0,1} * inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_1\rangle = r_{223,0,1} P_0 + r_{223,1,1} P_1$

$r_{223,0,1} \ = \ -ci_{1,1} * inv_{0,0}$

$r_{223,1,1} \ = \ -ci_{1,1} * inv_{0,1}$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{224} : \langle P_p | \hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{225} : \langle P_p | \hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\alpha^-\hat{1}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{226} : \langle P_p|\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_q\rangle =>$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_0\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_1\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_2\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_3\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_4\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_5\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_6\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_7\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_8\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_9\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_{10}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_{11}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_{12}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_{13}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_{14}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{0}_\beta^-|P_{15}\rangle =$

$\hat{O}_{227} : \langle P_p|\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_q\rangle =>$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_0\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_1\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_2\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_3\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_4\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_5\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_6\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_7\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_8\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_9\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_{10}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_{11}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_{12}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_{13}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_{14}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{0}_\beta^-\hat{1}_\beta^-|P_{15}\rangle =$

$\hat{O}_{228} : \langle P_p|\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_q\rangle =>$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_0\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_1\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_2\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_3\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_4\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_5\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_6\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_7\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_8\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_9\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{11}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{12}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\beta^+\hat{0}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{229} : \langle P_p|\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha|P_{15}\rangle =$

$\hat{O}_{230} : \langle P_p|\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta|P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{231} : \langle P_p | \hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{232} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{232,2,0} P_2 + r_{232,3,0} P_3$

$r_{232,2,0} \;=\; -ci_{0,0} * inv_{3,2}$

$r_{232,3,0} \;=\; -ci_{0,0} * inv_{3,3}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_1\rangle = r_{232,2,1} P_2 + r_{232,3,1} P_3$

$r_{232,2,1} \;=\; -ci_{1,0} * inv_{3,2}$

$r_{232,3,1} \;=\; -ci_{1,0} * inv_{3,3}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_2\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_3\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_4\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_5\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_6\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_7\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_8\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_9\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_{10}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_{11}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_{12}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_{13}\rangle = r_{232,14,13} P_{14}$

$r_{232,14,13} \;=\; -1.0$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_{14}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{0}_\beta^- |P_{15}\rangle =$

$\hat{O}_{233} : \langle P_p | \hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{1}_\beta^- | P_q \rangle =>$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{1}_\beta^- |P_0\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{1}_\beta^- |P_1\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{1}_\beta^- |P_2\rangle = r_{233,2,2} P_2 + r_{233,3,2} P_3$

$r_{233,2,2} \;=\; -ci_{2,2} * inv_{3,2}$

$r_{233,3,2} \;=\; -ci_{2,2} * inv_{3,3}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{1}_\beta^- |P_3\rangle = r_{233,2,3} P_2 + r_{233,3,3} P_3$

$r_{233,2,3} \;=\; -ci_{3,2} * inv_{3,2}$

$r_{233,3,3} \;=\; -ci_{3,2} * inv_{3,3}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\alpha^- \hat{1}_\beta^- |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{234} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_0\rangle = r_{234,2,0} P_2 + r_{234,3,0} P_3$

$r_{234,2,0} \;=\; ci_{0,0} * inv_{3,2}$

$r_{234,3,0} \;=\; ci_{0,0} * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_1\rangle = r_{234,2,1} P_2 + r_{234,3,1} P_3$

$r_{234,2,1} \;=\; ci_{1,0} * inv_{3,2}$

$r_{234,3,1} \;=\; ci_{1,0} * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_{12}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_{13}\rangle = r_{234,14,13} P_{14}$

$r_{234,14,13} \; = \; 1$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_{14}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_{15}\rangle =$

$\hat{O}_{235} : \langle P_p | \hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- | P_q \rangle =>$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_0\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_1\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_2\rangle = r_{235,2,2} P_2 + r_{235,3,2} P_3$

$r_{235,2,2} \; = \; -ci_{2,3} * inv_{3,2}$

$r_{235,3,2} \; = \; -ci_{2,3} * inv_{3,3}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_3\rangle = r_{235,2,3} P_2 + r_{235,3,3} P_3$

$r_{235,2,3} \; = \; -ci_{3,3} * inv_{3,2}$

$r_{235,3,3} \; = \; -ci_{3,3} * inv_{3,3}$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_4\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_5\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_6\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_7\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_8\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_9\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_{10}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_{11}\rangle = r_{235,11,11} P_{11}$

$r_{235,11,11} \; = \; -1.0$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_{12}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_{13}\rangle =$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_{14}\rangle = r_{235,14,14} P_{14}$

$r_{235,14,14} \; = \; -1.0$

$\hat{0}_\beta^+ \hat{1}_\alpha^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_{15}\rangle = r_{235,15,15} P_{15}$

$r_{235,15,15} = -1.0$

$\hat{O}_{236} : \langle P_p|\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_q\rangle =>$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_0\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_1\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_2\rangle = r_{236,2,2}P_2 + r_{236,3,2}P_3$

$r_{236,2,2} = ci_{2,3} * inv_{3,2}$

$r_{236,3,2} = ci_{2,3} * inv_{3,3}$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_3\rangle = r_{236,2,3}P_2 + r_{236,3,3}P_3$

$r_{236,2,3} = ci_{3,3} * inv_{3,2}$

$r_{236,3,3} = ci_{3,3} * inv_{3,3}$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_4\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_5\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_6\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_7\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_8\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_9\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{10}\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{11}\rangle = r_{236,11,11}P_{11}$

$r_{236,11,11} = 1$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{12}\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{13}\rangle =$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{14}\rangle = r_{236,14,14}P_{14}$

$r_{236,14,14} = 1$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{15}\rangle = r_{236,15,15}P_{15}$

$r_{236,15,15} = 1$

$\hat{O}_{237} : \langle P_p|\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_q\rangle =>$

$\hat{0}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_0\rangle = r_{237,2,0}P_2 + r_{237,3,0}P_3$

$r_{237,2,0} = -ci_{0,1} * inv_{3,2}$

$r_{237,3,0} = -ci_{0,1} * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_1\rangle = r_{237,2,1} P_2 + r_{237,3,1} P_3$

$r_{237,2,1} = -ci_{1,1} * inv_{3,2}$

$r_{237,3,1} = -ci_{1,1} * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle = r_{237,11,12} P_{11}$

$r_{237,11,12} = -1.0$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{238} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_2\rangle = r_{238,2,2} P_2 + r_{238,3,2} P_3$

$r_{238,2,2} = ci_{2,2} * inv_{3,2}$

$r_{238,3,2} = ci_{2,2} * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_3\rangle = r_{238,2,3} P_2 + r_{238,3,3} P_3$

$r_{238,2,3} = ci_{3,2} * inv_{3,2}$

$r_{238,3,3} = ci_{3,2} * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{239} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_0\rangle = r_{239,2,0} P_2 + r_{239,3,0} P_3$

$r_{239,2,0} = ci_{0,1} * inv_{3,2}$

$r_{239,3,0} = ci_{0,1} * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_1\rangle = r_{239,2,1} P_2 + r_{239,3,1} P_3$

$r_{239,2,1} = ci_{1,1} * inv_{3,2}$

$r_{239,3,1} = ci_{1,1} * inv_{3,3}$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle = r_{239,11,12} P_{11}$

$r_{239,11,12} \ = \ 1$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{240} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{241} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_4\rangle = r_{241,5,4} P_5$

$r_{241,5,4} \ = \ -1.0$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{242} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{243} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_5\rangle = r_{243,5,5} P_5$

$r_{243,5,5} \ = \ -1.0$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{13}\rangle = r_{243,13,13} P_{13}$

$r_{243,13,13} \ = \ -1.0$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{14}\rangle = r_{243,14,14} P_{14}$

$r_{243,14,14} \ = \ -1.0$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{15}\rangle = r_{243,15,15} P_{15}$

$r_{243,15,15} \ = \ -1.0$

$\hat{O}_{244} : \langle P_p | \hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_1\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_2\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_3\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_4\rangle = r_{244,5,4}P_5$

$r_{244,5,4} = 1$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_5\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_6\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_7\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_8\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_9\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{10}\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{11}\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{12}\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{13}\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{245} : \langle P_p|\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_q\rangle =>$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_0\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_1\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_2\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_3\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_4\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_5\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_6\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_7\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_8\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_9\rangle =$

$\hat{0}_\beta^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{10}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{11}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{13}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{14}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\alpha}^{-}\hat{1}_{\alpha}^{-}|P_{15}\rangle =$

$\hat{O}_{246} : \langle P_p|\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_0\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_1\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_2\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_3\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_4\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_5\rangle = r_{246,5,5}P_5$

$r_{246,5,5} \ = \ 1$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_6\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_7\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_8\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_9\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{10}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{11}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{13}\rangle = r_{246,13,13}P_{13}$

$r_{246,13,13} \ = \ 1$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{14}\rangle = r_{246,14,14}P_{14}$

$r_{246,14,14} \ = \ 1.0$

$\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{15}\rangle = r_{246,15,15}P_{15}$

$r_{246,15,15} \ = \ 1.0$

$\hat{O}_{247} : \langle P_p|\hat{0}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{0}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{248} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{249} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_4\rangle = r_{249,4,4} P_4$

$r_{249,4,4} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle = r_{249,11,11} P_{11}$

$r_{249,11,11} \ = \ 1$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle = r_{249,12,12} P_{12}$

$r_{249,12,12} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle = r_{249,15,15} P_{15}$

$r_{249,15,15} \ = \ 1$

$\hat{O}_{250} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{251} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_5\rangle = r_{251,4,5} P_4$

$r_{251,4,5} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{252} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_4\rangle = r_{252,4,4} P_4$

$r_{252,4,4} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle = r_{252,11,11} P_{11}$

$r_{252,11,11} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle = r_{252,12,12} P_{12}$

$r_{252,12,12} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle = r_{252,15,15} P_{15}$

$r_{252,15,15} \ = \ -1.0$

$\hat{O}_{253} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_0 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_1 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_2 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_3 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_4 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_5 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_6 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_7 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_8 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_9 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_{10} \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_{11} \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_{12} \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_{13} \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_{14} \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\alpha | P_{15} \rangle =$

$\hat{O}_{254} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_0 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_1 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_2 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_3 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_4 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_5 \rangle = r_{254,4,5} P_4$

$r_{254,4,5} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_6 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_7 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_8 \rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{255} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{256} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{256,2,0} P_2 + r_{256,3,0} P_3$

$r_{256,2,0} \ = \ ci_{0,0} * inv_{3,2}$

$r_{256,3,0} = ci_{0,0} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_1\rangle = r_{256,2,1} P_2 + r_{256,3,1} P_3$

$r_{256,2,1} = ci_{1,0} * inv_{3,2}$

$r_{256,3,1} = ci_{1,0} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle = r_{256,14,13} P_{14}$

$r_{256,14,13} = 1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{257} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_2\rangle = r_{257,2,2} P_2 + r_{257,3,2} P_3$

$r_{257,2,2} = ci_{2,2} * inv_{3,2}$

$r_{257,3,2} = ci_{2,2} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_3\rangle = r_{257,2,3} P_2 + r_{257,3,3} P_3$

$r_{257,2,3} = ci_{3,2} * inv_{3,2}$

$r_{257,3,3} = ci_{3,2} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{258} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_0\rangle = r_{258,2,0} P_2 + r_{258,3,0} P_3$

$r_{258,2,0} \;=\; -ci_{0,0} * inv_{3,2}$

$r_{258,3,0} \;=\; -ci_{0,0} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_1\rangle = r_{258,2,1} P_2 + r_{258,3,1} P_3$

$r_{258,2,1} \;=\; -ci_{1,0} * inv_{3,2}$

$r_{258,3,1} \;=\; -ci_{1,0} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle = r_{258,14,13} P_{14}$

$r_{258,14,13} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{259} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_2\rangle = r_{259,2,2} P_2 + r_{259,3,2} P_3$

$r_{259,2,2} \ = \ ci_{2,3} * inv_{3,2}$

$r_{259,3,2} \ = \ ci_{2,3} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_3\rangle = r_{259,2,3} P_2 + r_{259,3,3} P_3$

$r_{259,2,3} \ = \ ci_{3,3} * inv_{3,2}$

$r_{259,3,3} \ = \ ci_{3,3} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle = r_{259,11,11} P_{11}$

$r_{259,11,11} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{259,14,14} P_{14}$

$r_{259,14,14} \ = \ 1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{0}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle = r_{259,15,15} P_{15}$

$r_{259,15,15} \ = \ 1.0$

$\hat{O}_{260} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_2\rangle = r_{260,2,2} P_2 + r_{260,3,2} P_3$

$r_{260,2,2} \ = \ -ci_{2,3} * inv_{3,2}$

$r_{260,3,2} \ = \ -ci_{2,3} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_3\rangle = r_{260,2,3} P_2 + r_{260,3,3} P_3$

$r_{260,2,3} \ = \ -ci_{3,3} * inv_{3,2}$

$r_{260,3,3} \ = \ -ci_{3,3} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle = r_{260,11,11} P_{11}$

$r_{260,11,11} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle = r_{260,14,14} P_{14}$

$r_{260,14,14} \ = \ -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle = r_{260,15,15} P_{15}$

$r_{260,15,15} \ = \ -1.0$

$\hat{O}_{261} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_0\rangle = r_{261,2,0} P_2 + r_{261,3,0} P_3$

$r_{261,2,0} \;=\; ci_{0,1} * inv_{3,2}$

$r_{261,3,0} \;=\; ci_{0,1} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_1\rangle = r_{261,2,1} P_2 + r_{261,3,1} P_3$

$r_{261,2,1} \;=\; ci_{1,1} * inv_{3,2}$

$r_{261,3,1} \;=\; ci_{1,1} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle = r_{261,11,12} P_{11}$

$r_{261,11,12} \;=\; 1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{262} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_2\rangle = r_{262,2,2} P_2 + r_{262,3,2} P_3$

$r_{262,2,2} \;=\; -ci_{2,2} * inv_{3,2}$

$r_{262,3,2} \;=\; -ci_{2,2} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_3\rangle = r_{262,2,3} P_2 + r_{262,3,3} P_3$

$r_{262,2,3} = -ci_{3,2} * inv_{3,2}$

$r_{262,3,3} = -ci_{3,2} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{263} : \langle P_p | \hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_0\rangle = r_{263,2,0} P_2 + r_{263,3,0} P_3$

$r_{263,2,0} = -ci_{0,1} * inv_{3,2}$

$r_{263,3,0} = -ci_{0,1} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_1\rangle = r_{263,2,1} P_2 + r_{263,3,1} P_3$

$r_{263,2,1} = -ci_{1,1} * inv_{3,2}$

$r_{263,3,1} = -ci_{1,1} * inv_{3,3}$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle = r_{263,11,12} P_{11}$

$r_{263,11,12} = -1.0$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{264} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{265} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{266} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{267} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{268} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_5\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_6\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_7\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_8\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_9\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{10}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{11}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{12}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{13}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{0}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{269} : \langle P_p|\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_q\rangle =>$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_0\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_1\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_2\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_3\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_4\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_5\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_6\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_7\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_8\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_9\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{10}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{11}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{12}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{13}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{14}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{270} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_0 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_1 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_2 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_3 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_4 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_5 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_6 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_7 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_8 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_9 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_{10} \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_{11} \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_{12} \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_{13} \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_{14} \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\beta | P_{15} \rangle =$

$\hat{O}_{271} : \langle P_p | \hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta | P_0 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta | P_1 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta | P_2 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta | P_3 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta | P_4 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta | P_5 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta | P_6 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta | P_7 \rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\beta | P_8 \rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{10}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{272} : \langle P_p|\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_q\rangle =>$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_0\rangle = r_{272,0,0}P_0 + r_{272,1,0}P_1$

$r_{272,0,0} = -ci_{0,0} * inv_{1,0}$

$r_{272,1,0} = -ci_{0,0} * inv_{1,1}$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_1\rangle = r_{272,0,1}P_0 + r_{272,1,1}P_1$

$r_{272,0,1} = -ci_{1,0} * inv_{1,0}$

$r_{272,1,1} = -ci_{1,0} * inv_{1,1}$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_2\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_3\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_4\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_5\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_6\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_7\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_8\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_9\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{10}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{11}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{13}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{14}\rangle =$

$\hat{1}_{\alpha}^{+}\hat{1}_{\beta}^{+}\hat{0}_{\alpha}^{-}\hat{0}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{273} : \langle P_p|\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_q\rangle =>$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_0\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_1\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_2\rangle = r_{273,0,2}P_0 + r_{273,1,2}P_1$

$r_{273,0,2} = -ci_{2,2} * inv_{1,0}$

$r_{273,1,2} = -ci_{2,2} * inv_{1,1}$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_3\rangle = r_{273,0,3}P_0 + r_{273,1,3}P_1$

$r_{273,0,3} = -ci_{3,2} * inv_{1,0}$

$r_{273,1,3} = -ci_{3,2} * inv_{1,1}$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_4\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_5\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_6\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_7\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_8\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_9\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_{10}\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_{11}\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_{12}\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_{13}\rangle = r_{273,14,13}P_{14}$

$r_{273,14,13} = 1$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_{14}\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\alpha\hat{1}^-_\beta|P_{15}\rangle =$

$\hat{O}_{274} : \langle P_p|\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_q\rangle =>$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_0\rangle = r_{274,0,0}P_0 + r_{274,1,0}P_1$

$r_{274,0,0} = ci_{0,0} * inv_{1,0}$

$r_{274,1,0} = ci_{0,0} * inv_{1,1}$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{0}^-_\beta\hat{0}^-_\alpha|P_1\rangle = r_{274,0,1}P_0 + r_{274,1,1}P_1$

$r_{274,0,1} = ci_{1,0} * inv_{1,0}$

$r_{274,1,1} = ci_{1,0} * inv_{1,1}$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_2\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_3\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_4\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_5\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_6\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_7\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_8\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_9\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_{10}\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_{11}\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_{12}\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_{13}\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_{14}\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{0}_\alpha^- |P_{15}\rangle =$

$\hat{O}_{275} : \langle P_p | \hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{1}_\alpha^- | P_q \rangle =>$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_0\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_1\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_2\rangle = r_{275,0,2} P_0 + r_{275,1,2} P_1$

$r_{275,0,2} = -ci_{2,3} * inv_{1,0}$

$r_{275,1,2} = -ci_{2,3} * inv_{1,1}$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_3\rangle = r_{275,0,3} P_0 + r_{275,1,3} P_1$

$r_{275,0,3} = -ci_{3,3} * inv_{1,0}$

$r_{275,1,3} = -ci_{3,3} * inv_{1,1}$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_4\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_5\rangle =$

$\hat{1}_\alpha^+ \hat{1}_\beta^+ \hat{0}_\beta^- \hat{1}_\alpha^- |P_6\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_7\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_8\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_9\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_{10}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_{11}\rangle = r_{275,12,11}P_{12}$

$r_{275,12,11} \ = \ -1.0$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_{12}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_{13}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_{14}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{0}_\beta^-\hat{1}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{276} : \langle P_p|\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_q\rangle =>$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_0\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_1\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_2\rangle = r_{276,0,2}P_0 + r_{276,1,2}P_1$

$r_{276,0,2} \ = \ ci_{2,3} * inv_{1,0}$

$r_{276,1,2} \ = \ ci_{2,3} * inv_{1,1}$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_3\rangle = r_{276,0,3}P_0 + r_{276,1,3}P_1$

$r_{276,0,3} \ = \ ci_{3,3} * inv_{1,0}$

$r_{276,1,3} \ = \ ci_{3,3} * inv_{1,1}$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_4\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_5\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_6\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_7\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_8\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_9\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{10}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{11}\rangle = r_{276,12,11}P_{12}$

$r_{276,12,11} \ = \ 1$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{12}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{13}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{14}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{0}_\beta^-|P_{15}\rangle =$

$\hat{O}_{277} : \langle P_p|\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_q\rangle =>$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_0\rangle = r_{277,0,0}P_0 + r_{277,1,0}P_1$

$r_{277,0,0} = -ci_{0,1} * inv_{1,0}$

$r_{277,1,0} = -ci_{0,1} * inv_{1,1}$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_1\rangle = r_{277,0,1}P_0 + r_{277,1,1}P_1$

$r_{277,0,1} = -ci_{1,1} * inv_{1,0}$

$r_{277,1,1} = -ci_{1,1} * inv_{1,1}$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_2\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_3\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_4\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_5\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_6\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_7\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_8\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_9\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{10}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{11}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{12}\rangle = r_{277,12,12}P_{12}$

$r_{277,12,12} = -1.0$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{13}\rangle =$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{14}\rangle = r_{277,14,14}P_{14}$

$r_{277,14,14} = -1.0$

$\hat{1}_\alpha^+\hat{1}_\beta^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{15}\rangle = r_{277,15,15}P_{15}$

$r_{277,15,15} = -1.0$

$\hat{O}_{278} : \langle P_p|\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_q\rangle =>$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_0\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_1\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_2\rangle = r_{278,0,2}P_0 + r_{278,1,2}P_1$

$r_{278,0,2} \;=\; ci_{2,2} * inv_{1,0}$

$r_{278,1,2} \;=\; ci_{2,2} * inv_{1,1}$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_3\rangle = r_{278,0,3}P_0 + r_{278,1,3}P_1$

$r_{278,0,3} \;=\; ci_{3,2} * inv_{1,0}$

$r_{278,1,3} \;=\; ci_{3,2} * inv_{1,1}$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_4\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_5\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_6\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_7\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_8\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_9\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_{10}\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_{11}\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_{12}\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_{13}\rangle = r_{278,14,13}P_{14}$

$r_{278,14,13} \;=\; -1.0$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_{14}\rangle =$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{0}^-_\alpha|P_{15}\rangle =$

$\hat{O}_{279} : \langle P_p|\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_q\rangle =>$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_0\rangle = r_{279,0,0}P_0 + r_{279,1,0}P_1$

$r_{279,0,0} \;=\; ci_{0,1} * inv_{1,0}$

$r_{279,1,0} \;=\; ci_{0,1} * inv_{1,1}$

$\hat{1}^+_\alpha\hat{1}^+_\beta\hat{1}^-_\beta\hat{1}^-_\alpha|P_1\rangle = r_{279,0,1}P_0 + r_{279,1,1}P_1$

$r_{279,0,1} = ci_{1,1} * inv_{1,0}$

$r_{279,1,1} = ci_{1,1} * inv_{1,1}$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle = r_{279,12,12} P_{12}$

$r_{279,12,12} = 1$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{279,14,14} P_{14}$

$r_{279,14,14} = 1$

$\hat{1}^+_\alpha \hat{1}^+_\beta \hat{1}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle = r_{279,15,15} P_{15}$

$r_{279,15,15} = 1$

$\hat{O}_{280} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{280,2,0} P_2 + r_{280,3,0} P_3$

$r_{280,2,0} = ci_{0,0} * inv_{2,2}$

$r_{280,3,0} = ci_{0,0} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_1\rangle = r_{280,2,1} P_2 + r_{280,3,1} P_3$

$r_{280,2,1} = ci_{1,0} * inv_{2,2}$

$r_{280,3,1} = ci_{1,0} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle = r_{280,12,11} P_{12}$

$r_{280,12,11} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{281} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_2\rangle = r_{281,2,2} P_2 + r_{281,3,2} P_3$

$r_{281,2,2} \ = \ ci_{2,2} * inv_{2,2}$

$r_{281,3,2} \ = \ ci_{2,2} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_3\rangle = r_{281,2,3} P_2 + r_{281,3,3} P_3$

$r_{281,2,3} \ = \ ci_{3,2} * inv_{2,2}$

$r_{281,3,3} \ = \ ci_{3,2} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle = r_{281,12,12} P_{12}$

$r_{281,12,12} \ = \ 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle = r_{281,13,13} P_{13}$

$r_{281,13,13} \ = \ 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle = r_{281,15,15} P_{15}$

$r_{281,15,15} \ = \ 1.0$

$\hat{O}_{282} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_0\rangle = r_{282,2,0} P_2 + r_{282,3,0} P_3$

$r_{282,2,0} \ = \ -ci_{0,0} * inv_{2,2}$

$r_{282,3,0} \ = \ -ci_{0,0} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_1\rangle = r_{282,2,1} P_2 + r_{282,3,1} P_3$

$r_{282,2,1} \ = \ -ci_{1,0} * inv_{2,2}$

$r_{282,3,1} \ = \ -ci_{1,0} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle = r_{282,12,11} P_{12}$

$r_{282,12,11} \ = \ 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{283} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_2\rangle = r_{283,2,2} P_2 + r_{283,3,2} P_3$

$r_{283,2,2} \ = \ ci_{2,3} * inv_{2,2}$

$r_{283,3,2} \ = \ ci_{2,3} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_3\rangle = r_{283,2,3} P_2 + r_{283,3,3} P_3$

$r_{283,2,3} \ = \ ci_{3,3} * inv_{2,2}$

$r_{283,3,3} \ = \ ci_{3,3} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{284} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_2\rangle = r_{284,2,2} P_2 + r_{284,3,2} P_3$

$r_{284,2,2} = -ci_{2,3} * inv_{2,2}$

$r_{284,3,2} = -ci_{2,3} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_3\rangle = r_{284,2,3} P_2 + r_{284,3,3} P_3$

$r_{284,2,3} = -ci_{3,3} * inv_{2,2}$

$r_{284,3,3} = -ci_{3,3} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{285} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_0\rangle = r_{285,2,0} P_2 + r_{285,3,0} P_3$

$r_{285,2,0} = ci_{0,1} * inv_{2,2}$

$r_{285,3,0} = ci_{0,1} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_1\rangle = r_{285,2,1} P_2 + r_{285,3,1} P_3$

$r_{285,2,1} = ci_{1,1} * inv_{2,2}$

$r_{285,3,1} = ci_{1,1} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle = r_{285,13,14} P_{13}$

$r_{285,13,14} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{286} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_2\rangle = r_{286,2,2} P_2 + r_{286,3,2} P_3$

$r_{286,2,2} \ = \ -ci_{2,2} * inv_{2,2}$

$r_{286,3,2} \ = \ -ci_{2,2} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_3\rangle = r_{286,2,3} P_2 + r_{286,3,3} P_3$

$r_{286,2,3} \ = \ -ci_{3,2} * inv_{2,2}$

$r_{286,3,3} \ = \ -ci_{3,2} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle = r_{286,12,12} P_{12}$

$r_{286,12,12} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle = r_{286,13,13} P_{13}$

$r_{286,13,13} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle = r_{286,15,15} P_{15}$

$r_{286,15,15} \ = \ -1.0$

$\hat{O}_{287} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_0\rangle = r_{287,2,0} P_2 + r_{287,3,0} P_3$

$r_{287,2,0} \ = \ -ci_{0,1} * inv_{2,2}$

$r_{287,3,0} \ = \ -ci_{0,1} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_1\rangle = r_{287,2,1} P_2 + r_{287,3,1} P_3$

$r_{287,2,1} \ = \ -ci_{1,1} * inv_{2,2}$

$r_{287,3,1} \ = \ -ci_{1,1} * inv_{2,3}$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{287,13,14} P_{13}$

$r_{287,13,14} \ = \ 1$

$\hat{1}^+_\beta \hat{0}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{288} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{289} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_4\rangle = r_{289,5,4} P_5$

$r_{289,5,4} \ = \ 1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{290} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{291} : \langle P_p|\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_q\rangle =>$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_0\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_1\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_2\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_3\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_4\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_5\rangle = r_{291,5,5}P_5$

$r_{291,5,5} \ = \ 1.0$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_6\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_7\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_8\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_9\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_{10}\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_{11}\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_{12}\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_{13}\rangle = r_{291,13,13}P_{13}$

$r_{291,13,13} \ = \ 1.0$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_{14}\rangle = r_{291,14,14}P_{14}$

$r_{291,14,14} \ = \ 1$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{0}^-_\beta\hat{1}^-_\beta|P_{15}\rangle = r_{291,15,15}P_{15}$

$r_{291,15,15} \ = \ 1$

$\hat{O}_{292} : \langle P_p|\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha\hat{0}^-_\alpha|P_q\rangle =>$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha\hat{0}^-_\alpha|P_0\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha\hat{0}^-_\alpha|P_1\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha\hat{0}^-_\alpha|P_2\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha\hat{0}^-_\alpha|P_3\rangle =$

$\hat{1}^+_\beta\hat{0}^+_\beta\hat{1}^-_\alpha\hat{0}^-_\alpha|P_4\rangle = r_{292,5,4}P_5$

$r_{292,5,4} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{293} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{294} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_0 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_1 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_2 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_3 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_4 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_5 \rangle = r_{294,5,5} P_5$

$r_{294,5,5} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_6 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_7 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_8 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_9 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_{10} \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_{11} \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_{12} \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_{13} \rangle = r_{294,13,13} P_{13}$

$r_{294,13,13} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_{14} \rangle = r_{294,14,14} P_{14}$

$r_{294,14,14} \ = \ -1.0$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta | P_{15} \rangle = r_{294,15,15} P_{15}$

$r_{294,15,15} \ = \ -1.0$

$\hat{O}_{295} : \langle P_p | \hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta | P_0 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta | P_1 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta | P_2 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta | P_3 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta | P_4 \rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{0}^+_\beta \hat{1}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{296} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_0\rangle = r_{296,0,0} P_0 + r_{296,1,0} P_1$

$r_{296,0,0} \ = \ ci_{0,0} * inv_{1,0}$

$r_{296,1,0} \ = \ ci_{0,0} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_1\rangle = r_{296,0,1} P_0 + r_{296,1,1} P_1$

$r_{296,0,1} \ = \ ci_{1,0} * inv_{1,0}$

$r_{296,1,1} \ = \ ci_{1,0} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{297} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_2\rangle = r_{297,0,2} P_0 + r_{297,1,2} P_1$

$r_{297,0,2} \ = \ ci_{2,2} * inv_{1,0}$

$r_{297,1,2} \ = \ ci_{2,2} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_3\rangle = r_{297,0,3} P_0 + r_{297,1,3} P_1$

$r_{297,0,3} \ = \ ci_{3,2} * inv_{1,0}$

$r_{297,1,3} \ = \ ci_{3,2} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle = r_{297,14,13} P_{14}$

$r_{297,14,13} \ = \ -1.0$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\alpha \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{298} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_0\rangle = r_{298,0,0} P_0 + r_{298,1,0} P_1$

$r_{298,0,0} \;=\; -ci_{0,0} * inv_{1,0}$

$r_{298,1,0} \;=\; -ci_{0,0} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_1\rangle = r_{298,0,1} P_0 + r_{298,1,1} P_1$

$r_{298,0,1} \;=\; -ci_{1,0} * inv_{1,0}$

$r_{298,1,1} \;=\; -ci_{1,0} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{299} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_2\rangle = r_{299,0,2} P_0 + r_{299,1,2} P_1$

$r_{299,0,2} \;=\; ci_{2,3} * inv_{1,0}$

$r_{299,1,2} \;=\; ci_{2,3} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_3\rangle = r_{299,0,3} P_0 + r_{299,1,3} P_1$

$r_{299,0,3} \;=\; ci_{3,3} * inv_{1,0}$

$r_{299,1,3} = ci_{3,3} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle = r_{299,12,11} P_{12}$

$r_{299,12,11} = 1.0$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{0}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{300} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_2\rangle = r_{300,0,2} P_0 + r_{300,1,2} P_1$

$r_{300,0,2} = -ci_{2,3} * inv_{1,0}$

$r_{300,1,2} = -ci_{2,3} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_3\rangle = r_{300,0,3} P_0 + r_{300,1,3} P_1$

$r_{300,0,3} = -ci_{3,3} * inv_{1,0}$

$r_{300,1,3} = -ci_{3,3} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{11}\rangle = r_{300,12,11} P_{12}$

$r_{300,12,11} \ = \ -1.0$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{301} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_0\rangle = r_{301,0,0} P_0 + r_{301,1,0} P_1$

$r_{301,0,0} \ = \ ci_{0,1} * inv_{1,0}$

$r_{301,1,0} \ = \ ci_{0,1} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_1\rangle = r_{301,0,1} P_0 + r_{301,1,1} P_1$

$r_{301,0,1} \ = \ ci_{1,1} * inv_{1,0}$

$r_{301,1,1} \ = \ ci_{1,1} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{12}\rangle = r_{301,12,12} P_{12}$

$r_{301,12,12} \ = \ 1.0$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\alpha \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{14}\rangle = r_{301,14,14}P_{14}$

$r_{301,14,14} \ = \ 1.0$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\alpha^-\hat{1}_\beta^-|P_{15}\rangle = r_{301,15,15}P_{15}$

$r_{301,15,15} \ = \ 1.0$

$\hat{O}_{302} : \langle P_p|\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_q\rangle =>$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_0\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_1\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_2\rangle = r_{302,0,2}P_0 + r_{302,1,2}P_1$

$r_{302,0,2} \ = \ -ci_{2,2} * inv_{1,0}$

$r_{302,1,2} \ = \ -ci_{2,2} * inv_{1,1}$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_3\rangle = r_{302,0,3}P_0 + r_{302,1,3}P_1$

$r_{302,0,3} \ = \ -ci_{3,2} * inv_{1,0}$

$r_{302,1,3} \ = \ -ci_{3,2} * inv_{1,1}$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_4\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_5\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_6\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_7\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_8\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_9\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{10}\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{11}\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{12}\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{13}\rangle = r_{302,14,13}P_{14}$

$r_{302,14,13} \ = \ 1.0$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{14}\rangle =$

$\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{0}_\alpha^-|P_{15}\rangle =$

$\hat{O}_{303} : \langle P_p|\hat{1}_\beta^+\hat{1}_\alpha^+\hat{1}_\beta^-\hat{1}_\alpha^-|P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_0\rangle = r_{303,0,0} P_0 + r_{303,1,0} P_1$

$r_{303,0,0} \;=\; -ci_{0,1} * inv_{1,0}$

$r_{303,1,0} \;=\; -ci_{0,1} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_1\rangle = r_{303,0,1} P_0 + r_{303,1,1} P_1$

$r_{303,0,1} \;=\; -ci_{1,1} * inv_{1,0}$

$r_{303,1,1} \;=\; -ci_{1,1} * inv_{1,1}$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{12}\rangle = r_{303,12,12} P_{12}$

$r_{303,12,12} \;=\; -1.0$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{14}\rangle = r_{303,14,14} P_{14}$

$r_{303,14,14} \;=\; -1.0$

$\hat{1}^+_\beta \hat{1}^+_\alpha \hat{1}^-_\beta \hat{1}^-_\alpha |P_{15}\rangle = r_{303,15,15} P_{15}$

$r_{303,15,15} \;=\; -1.0$

$\hat{O}_{304} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{305} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{306} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{0}^-_\beta |P_{15}\rangle =$

$\hat{O}_{307} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta | P_q \rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{0}^-_\beta \hat{1}^-_\beta |P_{15}\rangle =$

$\hat{O}_{308} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{0}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{309} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{11}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{12}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{13}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{14}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\alpha \hat{1}^-_\alpha |P_{15}\rangle =$

$\hat{O}_{310} : \langle P_p | \hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_q\rangle =>$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_0\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_1\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_2\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_3\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_4\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_5\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_6\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_7\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_8\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_9\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{10}\rangle =$

$\hat{1}^+_\beta \hat{1}^+_\beta \hat{1}^-_\beta \hat{0}^-_\beta |P_{11}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{12}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{13}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{14}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{0}_{\beta}^{-}|P_{15}\rangle =$

$\hat{O}_{311} : \langle P_p|\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_q\rangle =>$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_0\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_1\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_2\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_3\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_4\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_5\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_6\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_7\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_8\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_9\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{10}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{11}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{12}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{13}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{14}\rangle =$

$\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{+}\hat{1}_{\beta}^{-}\hat{1}_{\beta}^{-}|P_{15}\rangle =$