Final Projection

where

$$c_{1} = (q_{1}, f) = \int_{-1}^{1} \frac{1}{\sqrt{2}} f(t) dt$$

$$c_{2} = (q_{2}, f) = \int_{-1}^{1} \sqrt{\frac{3}{2}} t f(t) dt$$

$$c_{3} = (q_{3}, f) = \int_{-1}^{1} \frac{\sqrt{5}}{2\sqrt{2}} (3t^{2} - 1) f(t) dt$$