

$$f_{quadratic}(t) = \begin{cases} 1 - 3t^2 & \text{if } t < \frac{1}{3} \\ 1.5t^2 - 3t + 1.5 & \text{if } \frac{1}{3} \leq t < 1 \\ 0 & \text{otherwise} \end{cases}$$