3. Za $u \in [0,1]$ vrijedi

$r_i = (1-u)p_i + u p_{i+1}$, $i = 0,1,2$

$s_i = (1-u)r_i + u r_{i+1}$, $i = 0,1$

$t_0 = (1-u)s_0 + u s_1$

$f(u) = t_0$

$b_0(t) = (1-t)^3$

$b_1(t) = 3t(1-t)^2$

$b_2(t) = 3t^2(1-t)$

$b_3(t) = t^3$

$f(u) = b_0(u) p_0 + b_1(u) p_1 + b_2(u) p_2 + b_3(u) p_3$

$\quad = (1-u)^3 p_0 + 3u(1-u)^2 p_1 + 3u^2(1-u) p_2 + u^3 p_3$

$t_0 = (1-u) \cdot ((1-u)r_0 + u r_1) + u \cdot ((1-u)r_1 + u r_2)$

$\quad = (1-u)^2 r_0 + u(1-u) r_1 + u(1-u) r_1 + u^2 r_2$

$\quad = (1-u)^2 ((1-u)p_0 + u p_1) + 2u(1-u)((1-u)p_1 + u p_2)$

$\quad + u^2 ((1-u)p_2 + u p_3)$

$\quad = (1-u)^3 p_0 + u(1-u)^2 p_1 + 2u(1-u)^2 p_1 + 2u^2(1-u)p_2$

$\quad + u^2(1-u) p_2 + u^3 p_3$

$\quad = (1-u)^3 p_0 + 3u(1-u)^2 p_1 + 3u^2(1-u) p_2 + u^3 p_3$

$\quad = f(u)$