

$$f_1 - (st^df_1 - s^{d+1}f_2)^d = x_1 + \left(st^dx_1 - s^{d+1}x_2\right)^d - \left(st^d(x_1 + (st^dx_1 - s^{d+1}x_2)^d) - s^{d+1}(x_2 + (t^{d+1}x_1 - s^dtx_2)^d)\right)^d \equiv a$$