

$$= (2x_1 + 1)(-\Delta_2 + \Delta_1)x_2$$

$$+ (-2x_1\Delta x_{12} - \Delta x_{12})(-\Delta_2 + \Delta_1)$$

$$+ 2\Delta x_{12}x_1(-\Delta_2 + \Delta_1)$$

$$- \Delta x_{12}\Delta_2$$

$$= (2x_1 + 1)(-\Delta_2 + \Delta_1)x_2$$

$$+ 2x_1\cancel{\Delta x_{12}}^1\Delta_2 - 2x_1\cancel{\Delta x_{12}}^3\Delta_1 + \cancel{\Delta x_{12}}^2\Delta_2 - \Delta x_{12}\Delta_1$$

$$+ \cancel{-2\Delta x_{12}}^1\Delta_2x_1 + 2\cancel{\Delta x_{12}}^3x_1\Delta_1$$

$$- \Delta x_{12}^2\Delta_2$$

$$= (2x_1 + 1)(-\Delta_2 + \Delta_1)x_2 - \Delta x_{12}\Delta_1$$

$$= (*) \quad \checkmark$$