

$$\begin{aligned}
 &= (-\Delta_2 + \Delta_1) [ \underbrace{2 \cdot 2x_1y_1 + 2x_1 + 2y_1 + 1 - 1}_{2^3x_1\beta y_1 + 2^2x_1\beta + 2\beta y_1 + 2\beta} + \cancel{2x_1} ] \\
 &= (-\Delta_2 + \Delta_1) [ \underbrace{2 \cdot 2x_1y_1}_{2^3x_1\beta y_1 + 2^2x_1\beta} + \underbrace{x_1(2 + 2^2\beta)}_{2\beta y_1 + 2\beta} + \underbrace{y_1(2 + 2^2\beta)}_{2^3x_1\beta y_1 + 2\beta} ] \\
 &= (-\Delta_2 + \Delta_1) \cdot 2 [ \underbrace{2x_1y_1}_{=x_1+2x_1\beta} + \underbrace{x_1(1+2\beta)}_{=y_1+2y_1\beta} + \underbrace{y_1(1+2\beta)}_{=y_1+2y_1\beta} + \underbrace{2^2x_1\beta y_1 + \beta}_{=y_1+2y_1\beta} ]
 \end{aligned}$$

NR:

$$\begin{aligned}
 &2 \cdot x_2y_1 + x_2 + y_1 \\
 &= 2 \cdot (2x_1+1)\beta y_1 + (2x_1+1)\beta + y_1 \\
 &= \underbrace{2^2x_1\beta y_1 + 2\beta y_1}_{2^2x_1\beta y_1 + 2\beta y_1} + \underbrace{2x_1\beta + \beta}_{2x_1\beta + \beta} + \underbrace{y_1}_{y_1}
 \end{aligned}$$

$$= (-\Delta_2 + \Delta_1) \cdot 2 [ (2x_2y_1 + x_2 + y_1) + 2x_1y_1 + x_1 ]$$

$$= (-\Delta_2 + \Delta_1) \cdot 2 [ (2x_2y_1 + x_2 + y_1) + (2y_1+1)x_1 ]$$

For  $\Delta x_{12} = (2x_1+1)\beta$  follows

$$(2u_1+1) = (-\Delta_2 + \Delta_1) \cdot 2 [ (2x_2y_1 + x_2 + y_1) + 2 \cdot (2y_1+1)x_1 ]$$

$$= (-\Delta_2 + \Delta_1) [ (2x_2+1)(2y_1+1) - 1 + 2 \cdot (2y_1+1)x_1 ]$$

$$= (-\Delta_2 + \Delta_1) [ (2y_1+1) [ \underbrace{(2x_2+1) + 2x_1}_{2 \cdot (x_2+x_1)+1} ] - 1 ]$$

$$= (-\Delta_2 + \Delta_1) [ (2y_1+1) (2(x_1+1)+1) - 1 ]$$

$$= (-\Delta_2 + \Delta_1) [ \underbrace{2^2y_1(x_1+1)}_{(2x_1+1)\beta} + 2y_1 + 2(2x_1+1) + 1 - 1 ]$$

$$= (-\Delta_2 + \Delta_1) [ 2 \cdot (2y_1(x_1+1) + y_1 + (x_1+1)) ]$$

=

$$(2u_1+1) = (-\Delta_2 + \Delta_1) \cdot 2 \cdot (2x_2y_1 + x_2 + y_1)$$

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

$$(2u_1+1) = (-\Delta_2 + \Delta_1) \cdot 2 \cdot (2x_2y_1 + x_2 + y_1 - y_1) + 2 \cdot (2x_1+1)y_1$$

$$(2x_1+1)y_1 = 2x_1y_1 + y_1$$

$$= 2 \cdot ((2x_1+1)y_1 - y_1)$$

$$= 2 \cdot (2x_1+1)y_1 - 2y_1$$

$$\begin{aligned}
 &(2x_2+1)y_1 + (2x_1+1)y_1 \\
 &= (2x_2+1+2x_1+1)y_1 \\
 &= (2(x_2+x_1)+2)y_1 \\
 &= 2((x_2+x_1)+1)y_1
 \end{aligned}$$