

In[\*]:=  $\mathcal{L}[X_{i,j}[1]] / . \omega\_E[\{Q\_ , P0\_ , P1a\_ , P1b\_ \}] \Rightarrow \text{Factor@px2g}[P0 P1a]$

Out[\*]=

0

In[\*]:=  $\mathcal{L}[X_{i,j}[1]] / . \{T \rightarrow T_1, p_i \Rightarrow p_{1,i}, x_i \Rightarrow x_{1,i}\}$

Out[\*]=

$$\sqrt{T_1} \mathbb{E} \left[ \left\{ \begin{aligned} &(-p_{1,i} + p_{1,1+i}) x_{1,i} + (-1 + T_1) (p_{1,1+i} - p_{1,1+j}) x_{1,i} + (-p_{1,j} + p_{1,1+j}) x_{1,j}, \\ &0, 0, \frac{1}{2} \in (-1 + (p_{1,i} - p_{1,j}) x_{1,i} ((-1 + T_1) p_{1,j} x_{1,i} + 2 (1 - p_{1,j} x_{1,j}))) \end{aligned} \right\} \right]$$

In[\*]:=  $\text{CF} \left[ \frac{1}{2} \in (-1 + (p_{1,i} - p_{1,j}) x_{1,i} ((-1 + T_1) p_{1,j} x_{1,i} + 2 (1 - p_{1,j} x_{1,j}))) \right]$

Out[\*]=

$$\begin{aligned} &-\frac{\epsilon}{2} + \epsilon p_{1,i} x_{1,i} - \epsilon p_{1,j} x_{1,i} + \frac{1}{2} \in (-1 + T_1) p_{1,i} p_{1,j} x_{1,i}^2 - \\ &\frac{1}{2} \in (-1 + T_1) p_{1,j}^2 x_{1,i}^2 - \epsilon p_{1,i} p_{1,j} x_{1,i} x_{1,j} + \epsilon p_{1,j}^2 x_{1,i} x_{1,j} \end{aligned}$$

In[\*]:=  $\mathcal{L}[X_{i,j}[1]] / . \{T \rightarrow T_1, p_i \Rightarrow p_{1,i}, x_i \Rightarrow x_{1,i}\} / . \omega\_E[\{Q\_ , P0\_ , P1a\_ , P1b\_ \}] \Rightarrow$   
 $\text{Simplify@g2px}[px2g[P1b] // . \text{gR}_{1,i,j} / . \{\delta_{i,i} \rightarrow 1, \delta_{i,j} \rightarrow 0, \delta_{j,i} \rightarrow 0\}]$

Out[\*]=

$$\begin{aligned} &-\frac{1}{2} \in (1 + T_1^2 p_{1,j} (-p_{1,i} + p_{1,j}) x_{1,i}^2 + \\ &2 p_{1,j} x_{1,j} + T_1 p_{1,j} x_{1,i} (-2 + p_{1,i} (x_{1,i} + 2 x_{1,j}) - p_{1,j} (x_{1,i} + 2 x_{1,j}))) \end{aligned}$$

In[\*]:=  $\mathcal{L}[X_{i,j}[1]] / . \{T \rightarrow T_1, p_i \Rightarrow p_{1,i}, x_i \Rightarrow x_{1,i}\} / . \omega\_E[\{Q\_ , P0\_ , P1a\_ , P1b\_ \}] \Rightarrow$   
 $\text{Simplify@g2px}[px2g[P1b] // . \text{igR}_{1,i,j} / . \{\delta_{i,i} \rightarrow 0, \delta_{j,j} \rightarrow 0, \delta_{j,i} \rightarrow 0, \delta_{j,i} \rightarrow 0, \delta_{i,j} \rightarrow 0\}]$

Out[\*]=

$$\frac{\epsilon (T_1^2 + p_{1,j} (-p_{1,i} + p_{1,j}) x_{1,i}^2 + T_1 (p_{1,i} - p_{1,j}) x_{1,i} (-2 + p_{1,j} (x_{1,i} + 2 x_{1,j})))}{2 T_1^2}$$