

[[the friend of hers and the friend of John's]] =

$$\begin{aligned}
 & \frac{[]}{\triangleright \nu} \parallel \frac{[]}{\eta} \parallel \left( \frac{\frac{\mathbf{1}_u []}{\mathbf{sm.fr.pro}_k^{\triangleright u} \star \lambda x. []}}{x} \parallel \frac{[]}{\oplus} \parallel \frac{\frac{\mathbf{1}_{u'} []}{\mathbf{sm.fr.j}^{\triangleright u'} \star \lambda y. []}}{y} \right)^{\Downarrow} \\
 & \rightsquigarrow \frac{[]}{\triangleright \nu} \parallel \frac{[]}{\eta} \parallel \left( \frac{\mathbf{1}_u (\mathbf{1}_{u'} [])}{\lambda g. \left\{ \left\langle x \oplus y, g^{\frac{u \mapsto x}{u' \mapsto y}} \right\rangle \mid \text{fr}(g k) x, \text{fr } j y \right\}} \right) \\
 & \rightsquigarrow \frac{\mathbf{1}_u (\mathbf{1}_{u'} [])}{\left( \eta \mathbf{sm.fr.pro}_k.\mathbf{fr.j}^{\triangleright u, u'} \right)^{\triangleright \nu}}
 \end{aligned}$$