Using tree-pair diagrams to represent elements of Thompsons Group $F(n+1, m+1)$

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Multiplying tree-pair diagrams in $F(n)$

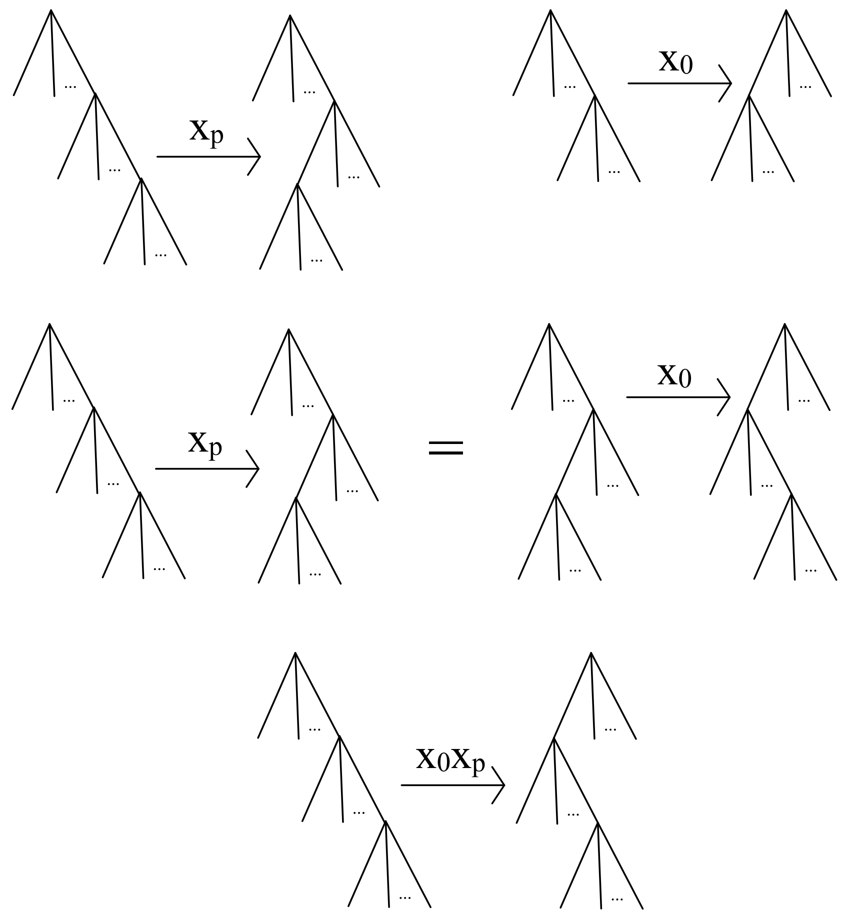


Figure 1: Composition of two elements of $F(n)$

Multiplying tree-pair diagrams in $F(n_1, ..., n_k)$

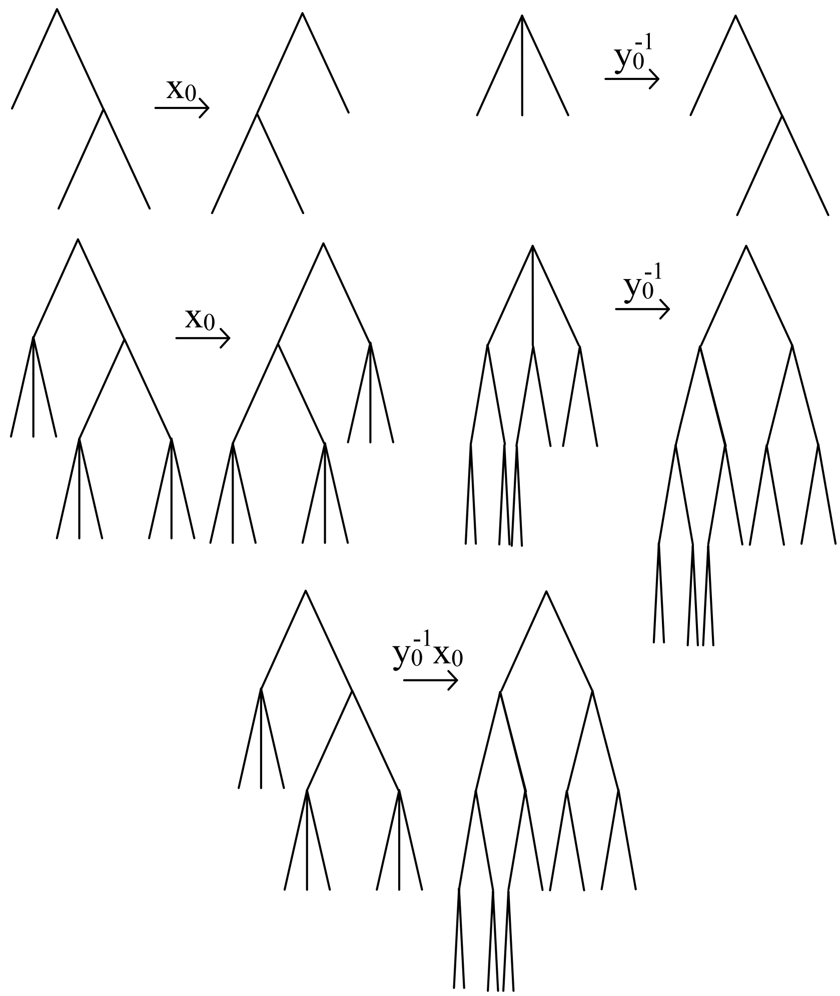
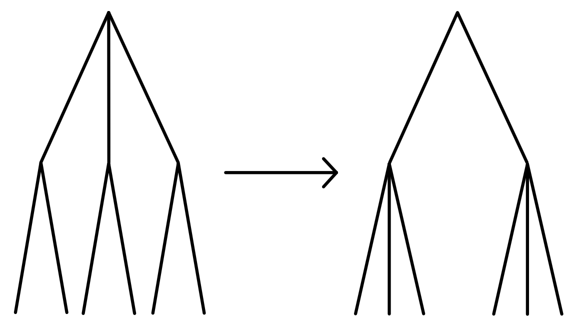
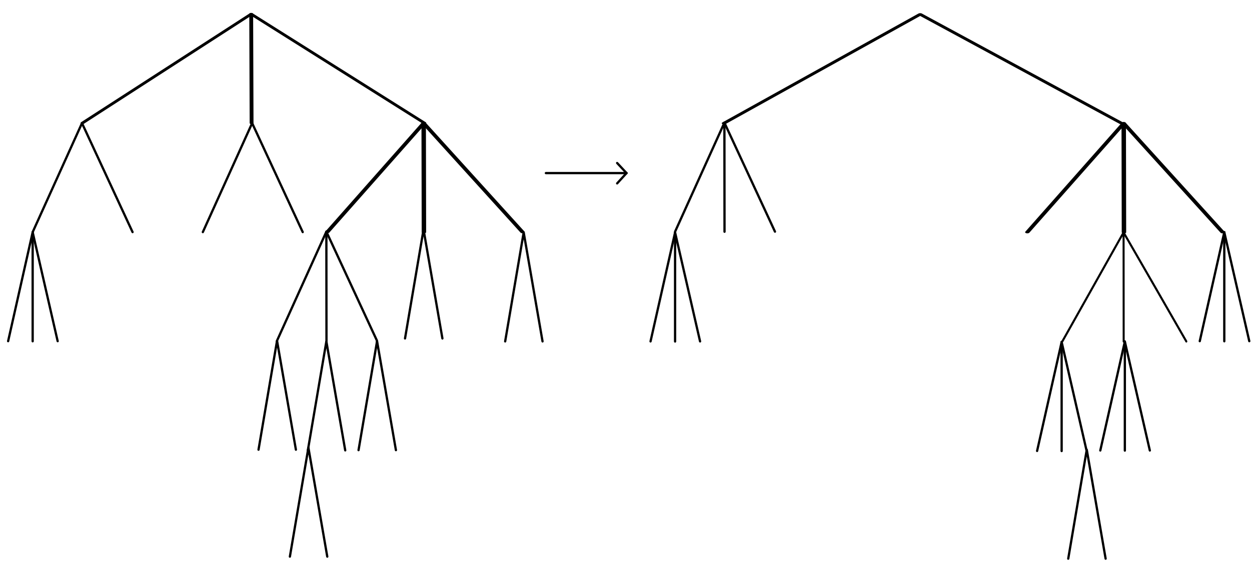


Figure 2: Composition of two elements of $F(2, 3)$

Representatives of the identity

Tree-pair diagrams representing the identity in $F(n)$ will always consist of two identical trees. This is not the case in $F(n_1, ..., n_k)$.





Minimal tree-pair diagram representatives may not be unique

Minimal tree-pair diagram representatives of $F(n)$ are unique. This is not the case in $F(n_1, ..., n_k)$.

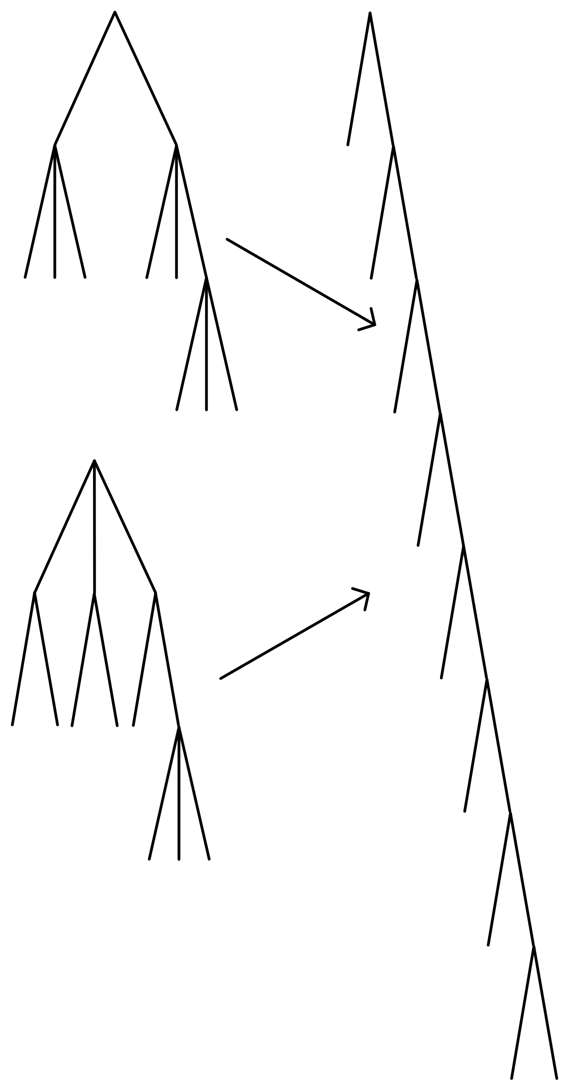


Figure 3: Two equivalent but distinct minimal tree-pair diagrams representing an element of $F(2,3)$

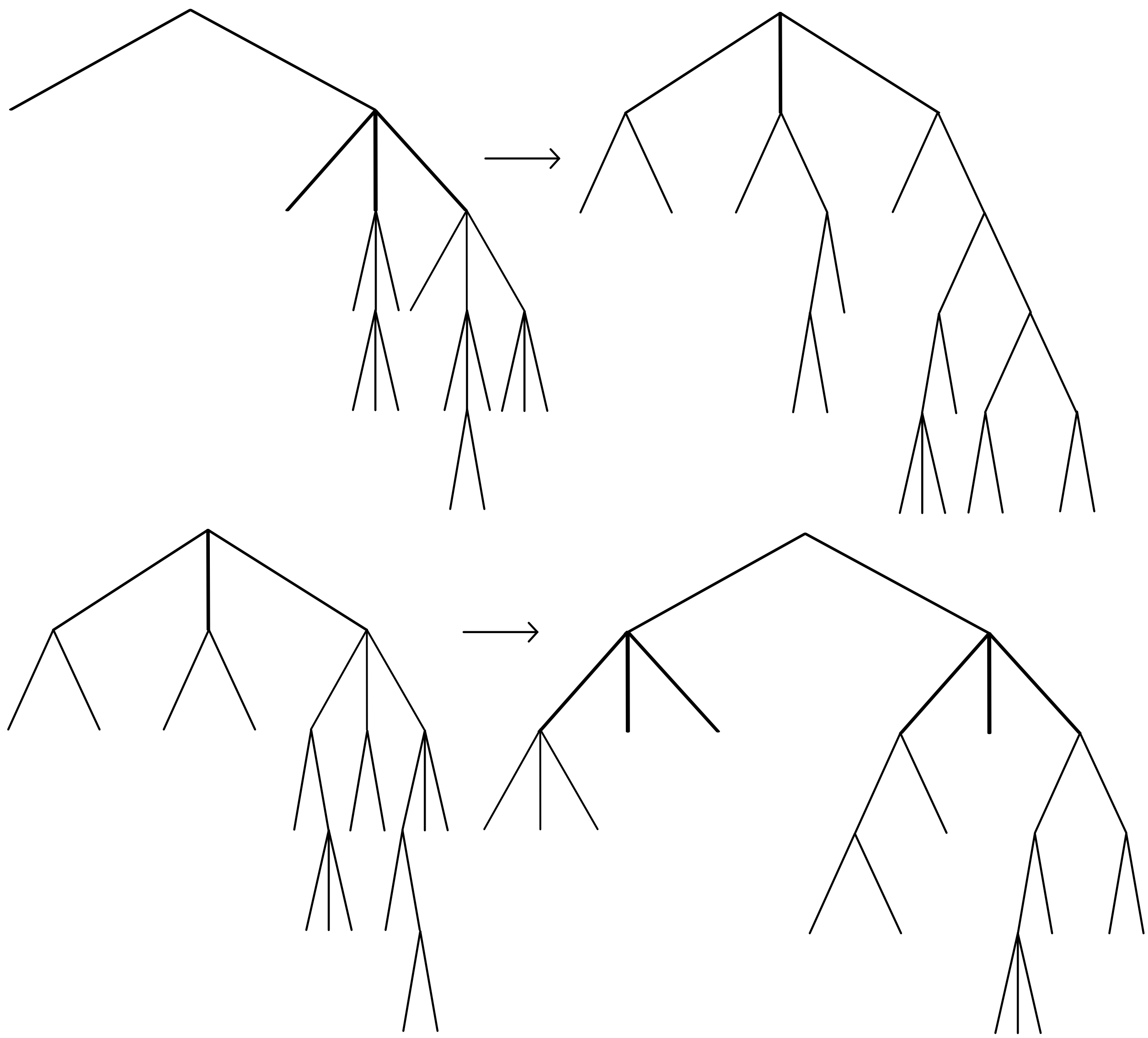


Figure 4: Two equivalent but distinct minimal tree-pair diagrams representing another element of $F(2,3)$

To get to the minimal tree-pair diagram, we may have to add carets

Minimal tree-pair diagram representatives of $F(n)$ can always be obtained solely by caret removal. Whereas in $F(n_1, ..., n_k)$, we may even need to add carets in order to obtain a minimal tree-pair diagram from a given tree-pair diagram.

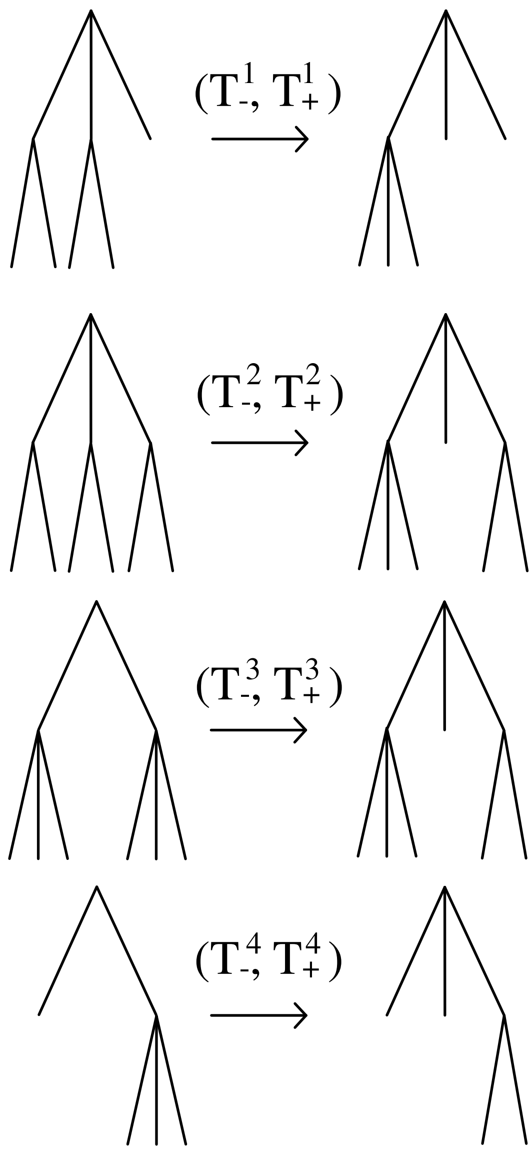


Figure 5: (T^1_-, T^1_+) is a (2,3)–ary tree-pair diagram which must have carets added to it in order to be transformed into its equivalent minimal tree-pair diagram (T^4_-, T^4_+)