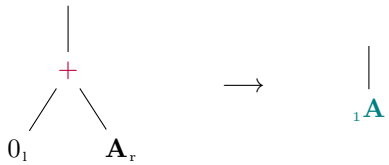
Model .Derivative

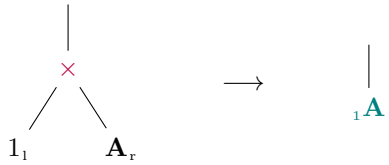
Tree Transformation Illustrations

Notations

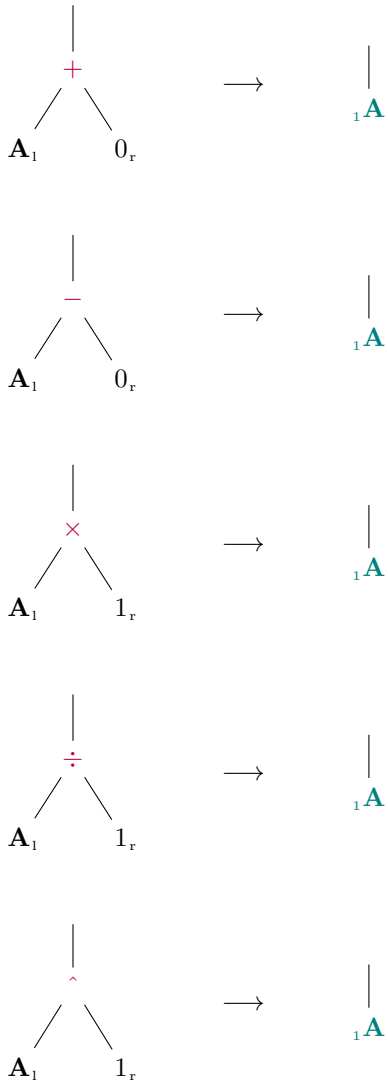
- x and y represent any variable nodes.
- **A** and **B** represent any subtrees.
- Purple node represents the argument node of the tree transformation function.
- Orange node comes from node's duplication, which requires a positioning sequence (argument node → template node) as an item of the generation sequence.
- Teal subtree comes from subtree's duplication, which requires a Primer and a positioning sequence (argument node → template subtree's root node) as two items of the generation sequence.
- The sequence of $_{l}$s and $_{r}$s at the bottom-right corner of the node(subtree) is its(its root node's) positioning sequence.
- The number at the bottom-left corner of the node(subtree) is its(its root node's) traversal order in depth-first search(DFS).

Element.LeftIdentity

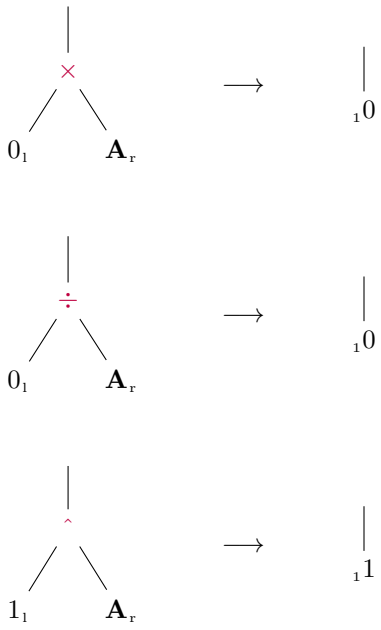




Element.RightIdentity



Element.LeftZero



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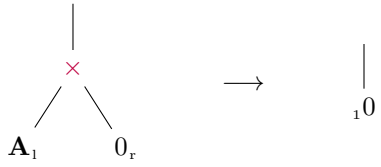
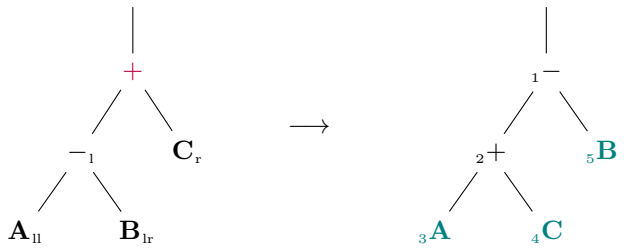
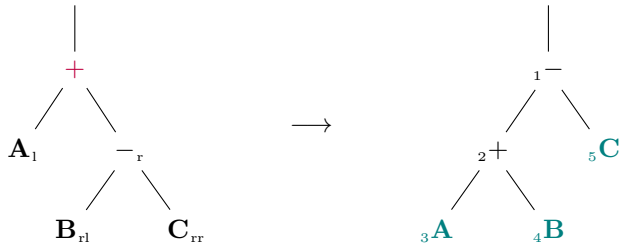
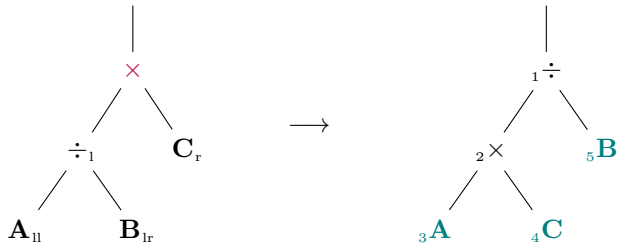
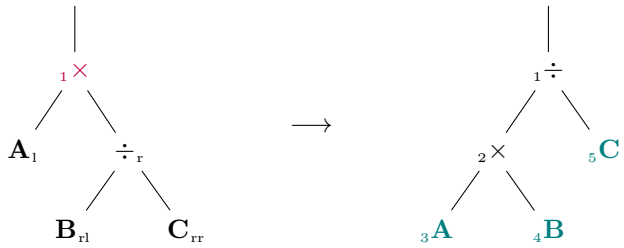


Element.Merger

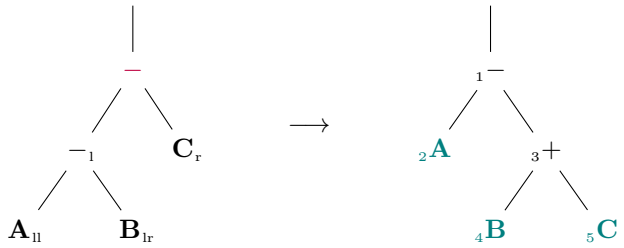


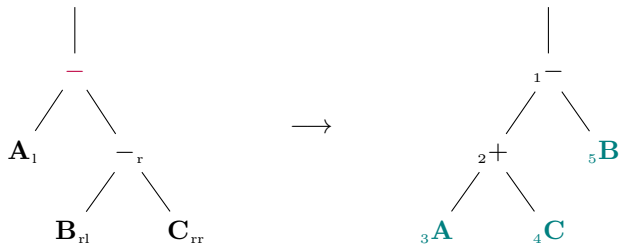


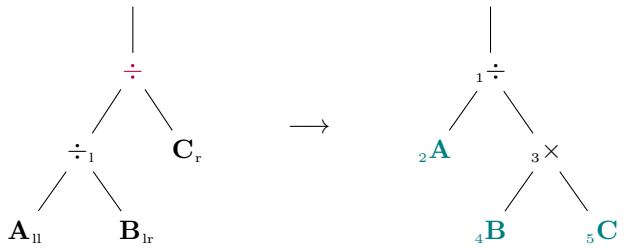


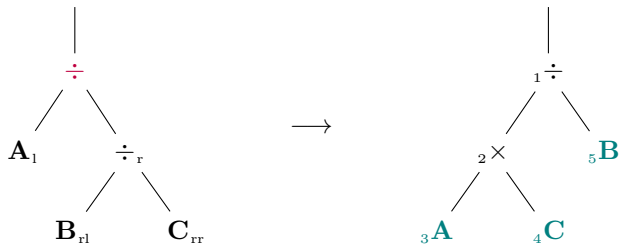


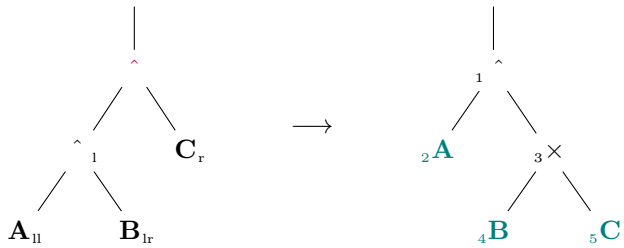
Element.Absorption



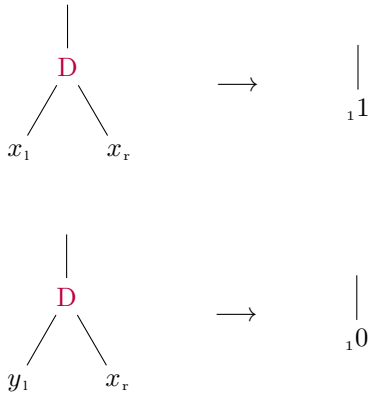




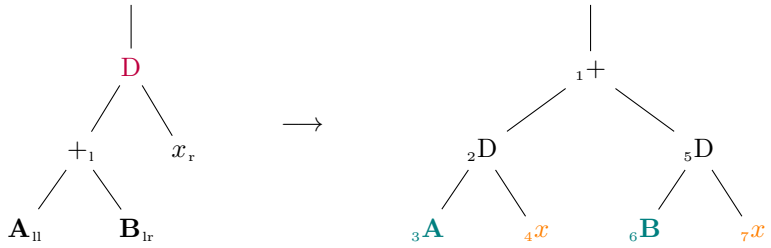




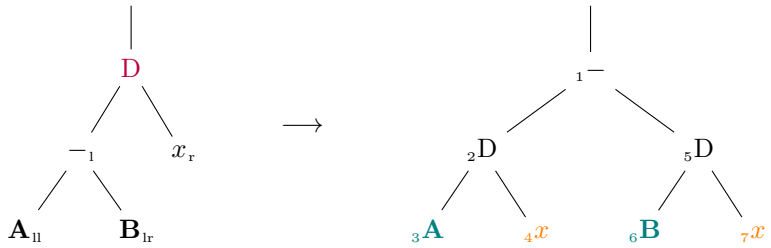
Derivative.Element



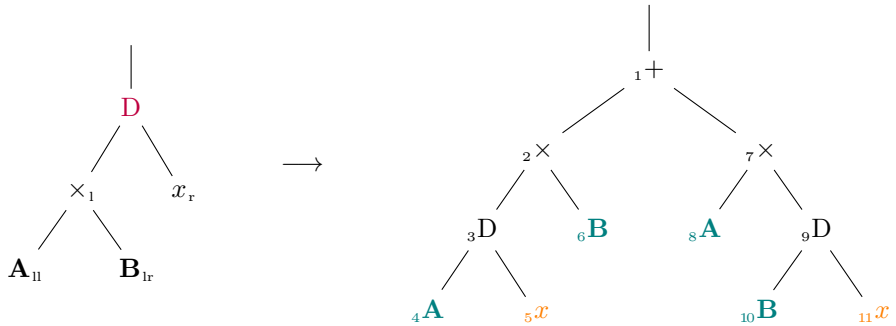
Derivative.Addition



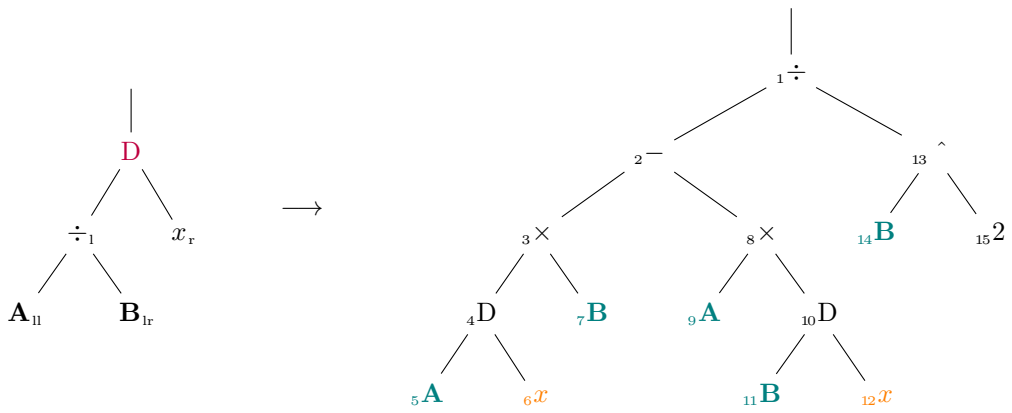
Derivative.Subtraction



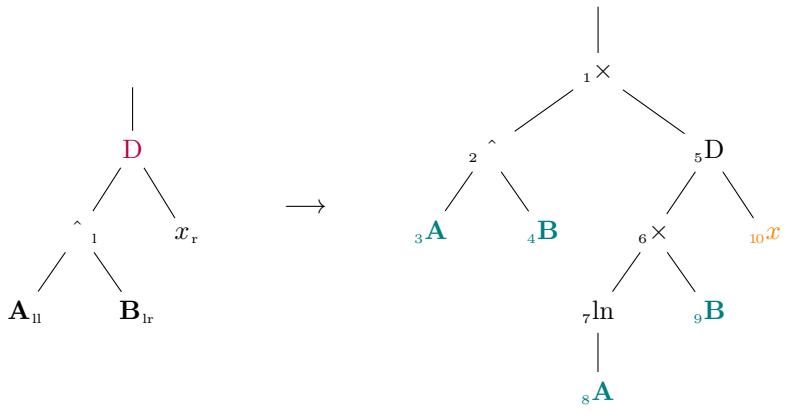
Derivative.Multiplication



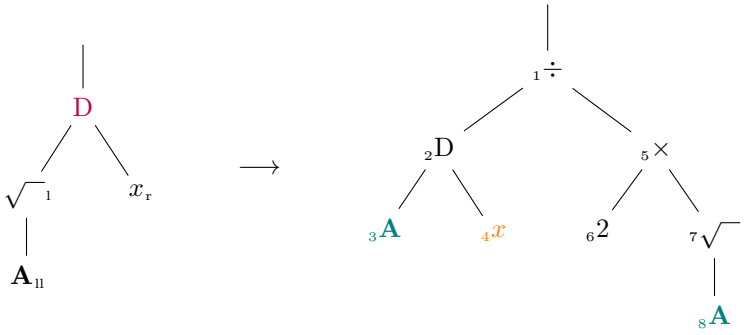
Derivative.Division



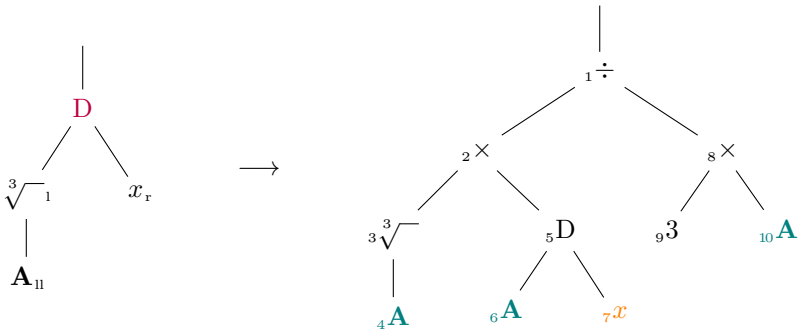
Derivative.Power



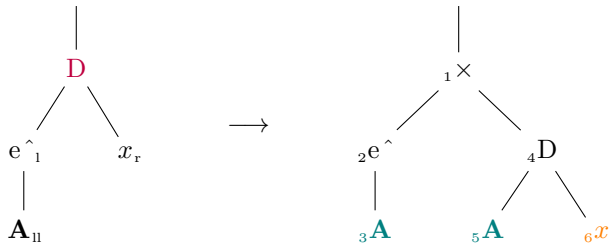
Derivative.SquareRoot



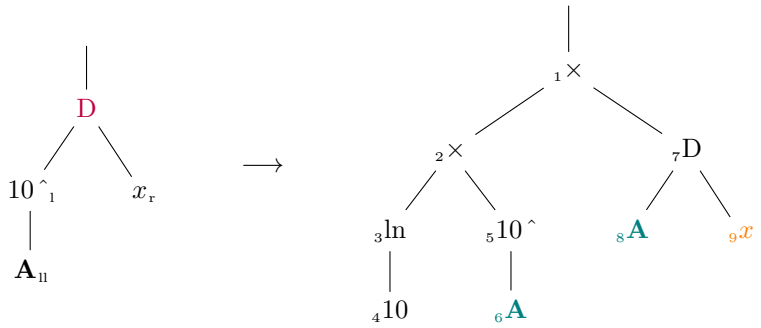
Derivative.CubeRoot



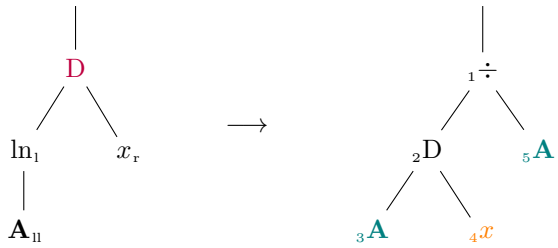
Derivative.NaturalExponent



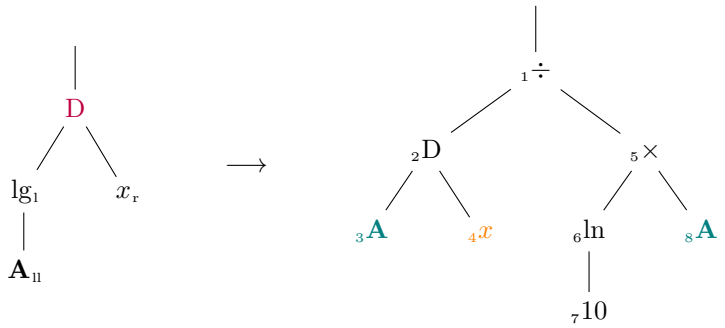
Derivative.DecimalExponent



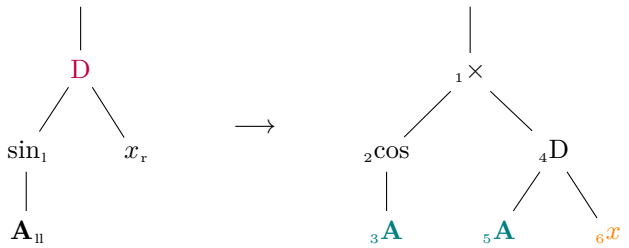
Derivative.NaturalLogarithm



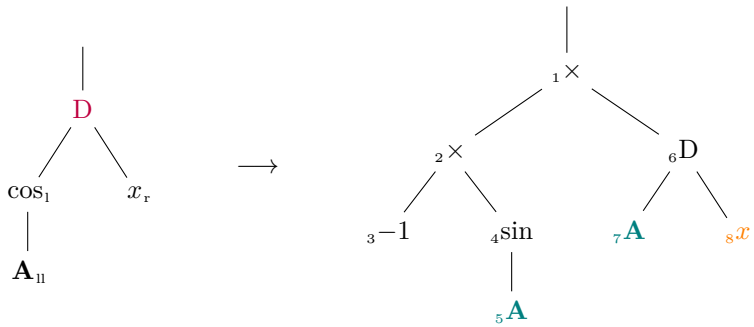
Derivative.DecimalLogarithm



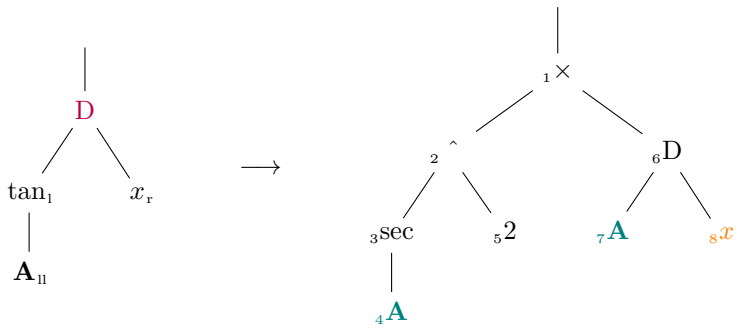
Derivative.Sine



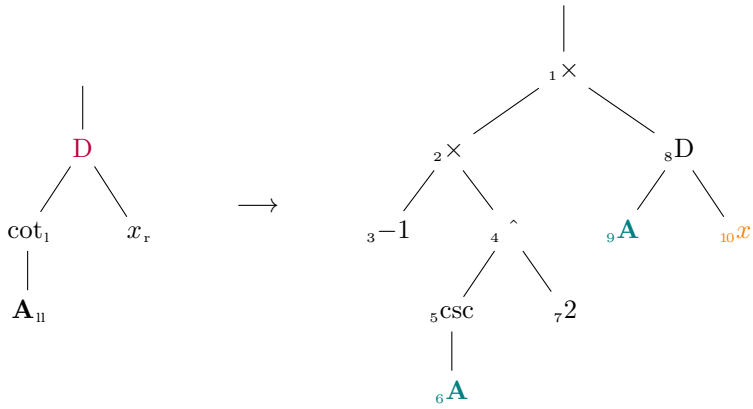
Derivative.Cosine



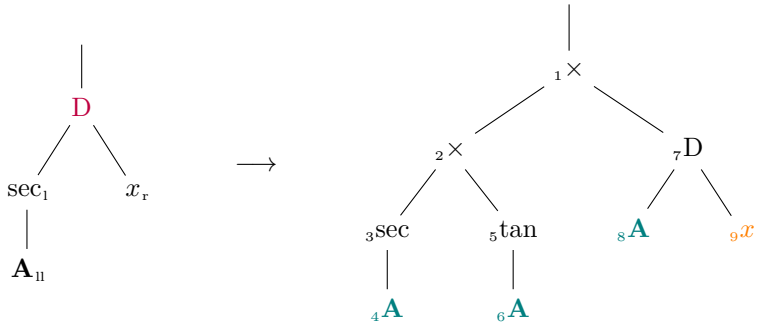
Derivative.Tangent



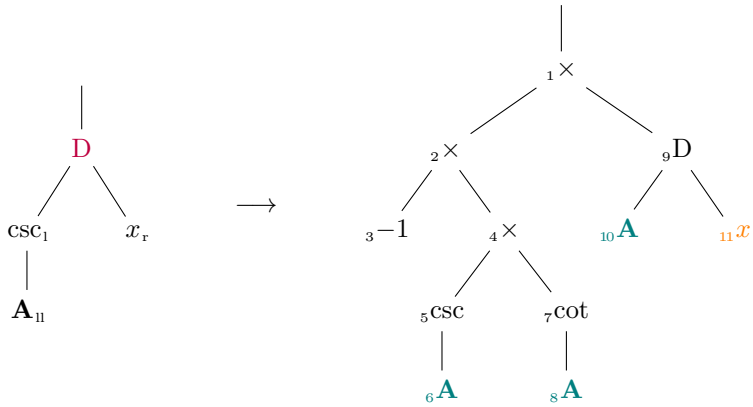
Derivative.Cotangent



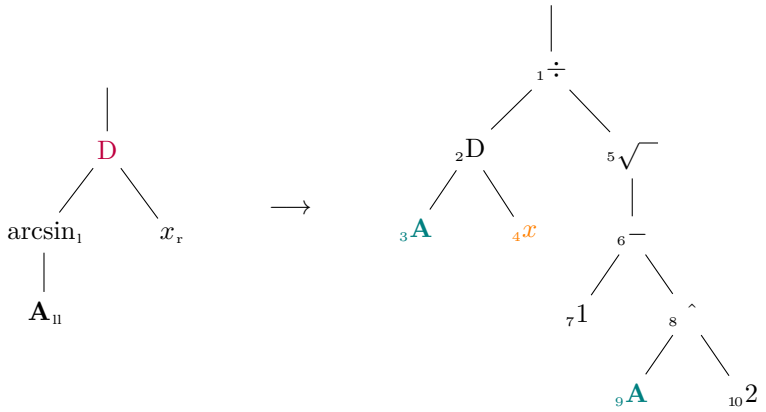
Derivative.Secant



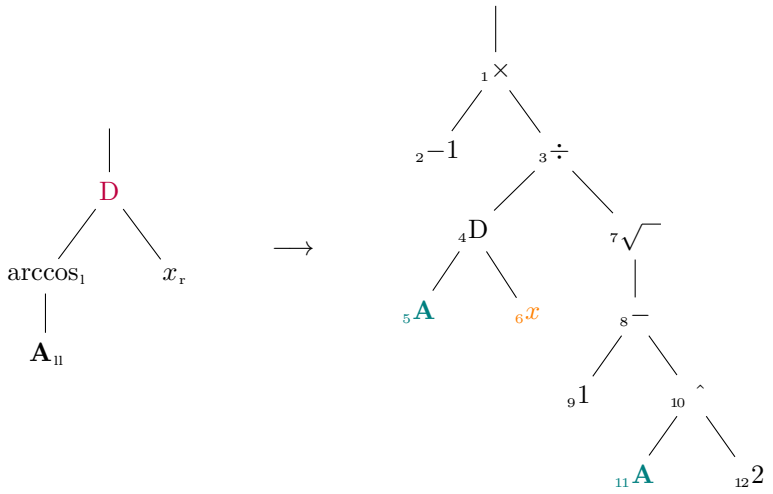
Derivative.Cosecant



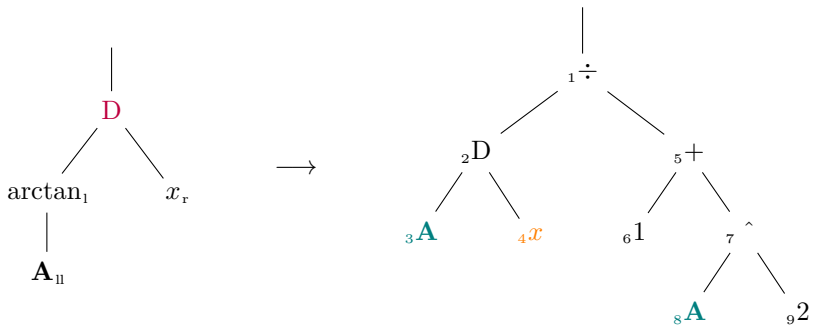
Derivative.InverseSine



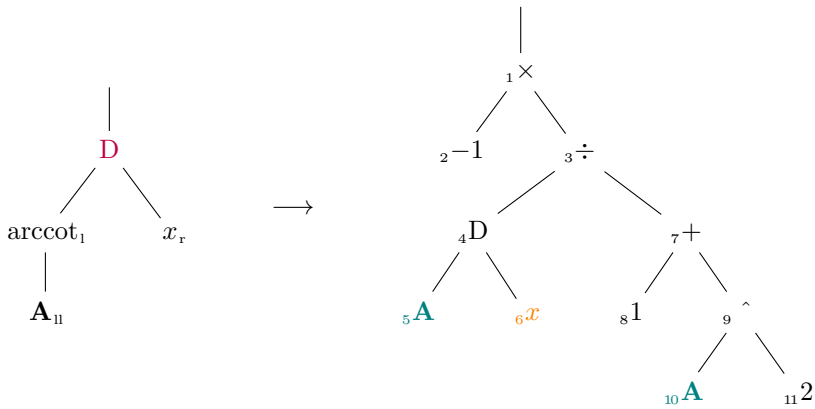
Derivative.InverseCosine



Derivative.InverseTangent



Derivative.InverseCotangent



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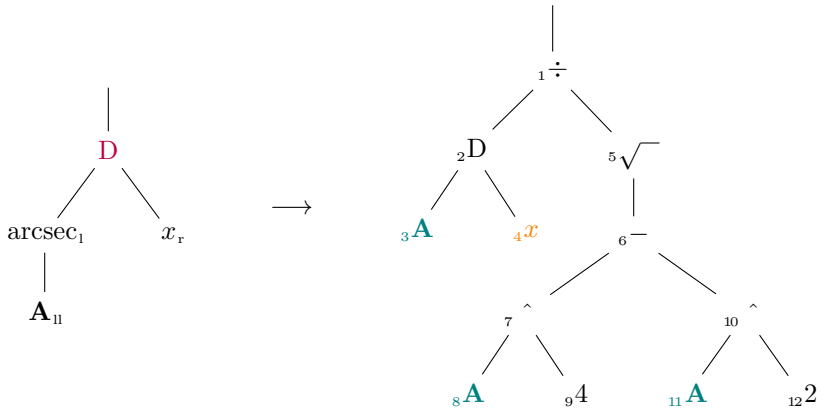
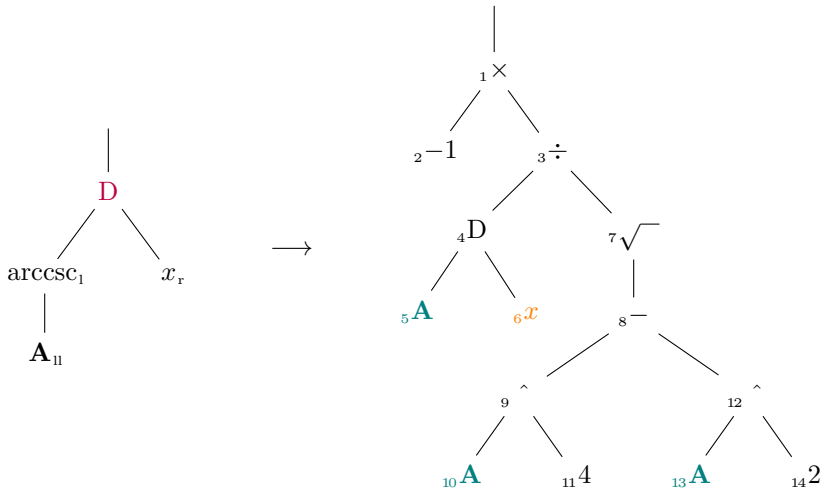
Derivative.InverseCosecant