

$xFormOpOps(op, ops) \triangleq$  Transform  $op$  against  $ops$   
 IF  $ops = \langle \rangle$  THEN  $\langle op \rangle$  and return intermediate transformed operations.  
 ELSE  $\langle op \rangle \circ xFormOpOps(OT(op, Head(ops)), Tail(ops))$   
 $xFormOpsOp(ops, op) \triangleq$  Transform  $ops$  against  $op$  and return the transformed  $ops$ .  
 LET  $opX \triangleq xFormOpOps(op, ops)$   
 IN  $[i \in 1 \dots Len(ops) \mapsto OT(ops[i], opX[i])]$   
 $xForm(op, ops) \triangleq$   
 $[xop \mapsto Last(xFormOpOps(op, ops)), xops \mapsto xFormOpsOp(ops, op)]$   
 $xFormShift(op, ops, shift) \triangleq xForm(op, SubSeq(ops, shift + 1, Len(ops)))$