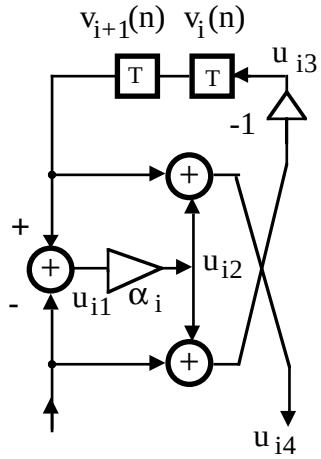
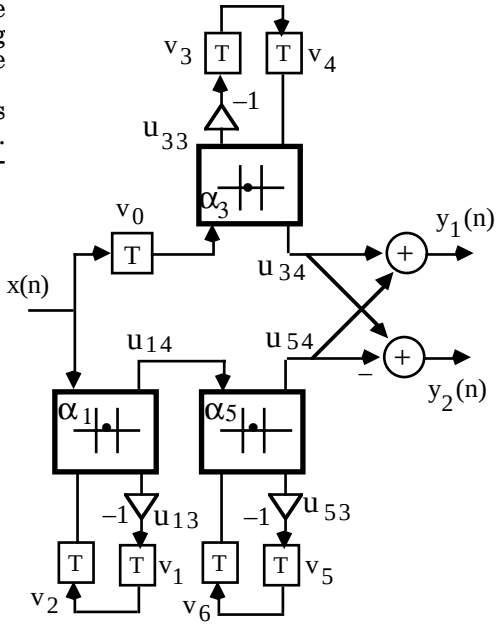
6.7 The figure below shows the internal structure of an allpass section and the node numbering where i = 1, 3, and 5. The basic operations are additions and multiplications.

An analysis of the precedence relations yields the difference equations shown in Table. Seven time slots are required for the arithmetic operations.



Bireciprocal WDF allpass section.



Nodes	Equations
N_2	$u_{11} := -x(n) + v_2(n)$ $u_{31} := -v_0(n) + v_4(n)$
N_3	$u_{12} := \alpha_1 u_{11}$ $u_{32} := \alpha_3 u_{31}$
N_4	$u_{13} := -(u_{12} + x(n))$ $u_{14} := u_{12} + v_2(n)$ $u_{33} := -(u_{32} + v_0(n))$ $u_{34} := u_{32} + v_4(n)$
N_5	$u_{51} := -u_{14} + v_6(n)$
N_6	$u_{52} := \alpha_5 u_{51}$
N_7	$u_{53} := -(u_{52} + u_{14})$ $u_{54} := u_{52} + v_6(n)$
N_8	$y_1(n) := u_{34} + u_{54}$ $y_2(n) := u_{34} - u_{54}$
N_1	$v_2(n+1) := v_1(n)$ $v_1(n+1) := u_{13}$ $v_4(n+1) := v_3(n)$ $v_3(n+1) := u_{33}$ $v_6(n+1) := v_5(n)$ $v_5(n+1) := u_{53}$ $v_0(n+1) := x(n)$

Difference equations in computable order.