

$x$	$y$	$x + y$	$xy$	Interaction of roots
0	0	0	0	no roots entered input channels $x$ and $y$
1	0	1	0	root propagated via channel $x$ to $q$
0	1	1	0	root propagated via channel $y$ to $q$
1	1	1	1	root $x$ is blocked by root $y$ and therefore deflected to channel $p$