	Transformation	Equation	Block Diagram	Equivalent Block Diagram
1	Combining Blocks in Cascade	$Y = (P_1 P_2) X$	$X \longrightarrow P_1 \longrightarrow P_2 \longrightarrow Y$	$X \longrightarrow P_1P_2 \longrightarrow Y$
2	Combining Blocks in Parallel; or Eliminating a Forward Loop	$Y = P_1 X \pm P_2 X$	$X \longrightarrow P_1 \longrightarrow Y \longrightarrow \pm$	$X \longrightarrow P_1 \pm P_2 \longrightarrow Y$
3	Removing a Block from a Forward Path	$Y = P_1 X \pm P_2 X$	P_2	P_2 P_1 P_2 P_2 P_2
4	Eliminating a Feedback Loop	$Y = P_1(X \mp P_2 Y)$	$X + P_1$	$\frac{X}{1 \pm P_1 P_2} \qquad \qquad Y$
5	Removing a Block from a Feedback Loop	$Y = P_1(X \mp P_2 Y)$	P ₂	X 1 P_2 P_1
6a	Rearranging Summing Points	$Z = W \pm X \pm Y$	<u>W</u> +	<u>W</u> + + Z <u>Y</u> ± ± <u>X</u>
6b	Rearranging Summing Points	$Z = W \pm X \pm Y$	X \pm Y	<u>W</u> + Z <u>X</u> ± + <u>Y</u> ±
7	Moving a Summing Point Ahead of a Block	$Z = PX \pm Y$	<i>X</i>	$\begin{array}{c c} X & + & & \\ & & & \\ & & & \\ \hline \end{array}$
8	Moving a Summing Point Beyond a Block	$Z = P[X \pm Y]$	X + P $X + P$ Y	$X \rightarrow P \rightarrow Z \rightarrow Z$

	Transformation	Equation	Block Diagram	Equivalent Block Diagram
9	Moving a Takeoff Point Ahead of a Block	Y = PX	<i>Y Y</i>	X P Y
10	Moving a Takeoff Point Beyond a Block	Y = PX	X	X P Y
11	Moving a Takeoff Point Ahead of a Summing Point	$Z = X \pm Y$	<u>X</u> + <u>Z</u> <u>Z</u> <u>Z</u>	X + Z + Z + Z + Z + Z + Z + Z + Z + Z +
12	Moving a Takeoff Point Beyond a Summing Point	$Z = X \pm Y$	<u>X</u> + <u>Z</u> ± <u>Y</u>	<u>X</u> + <u>Z</u> + <u>X</u> + +