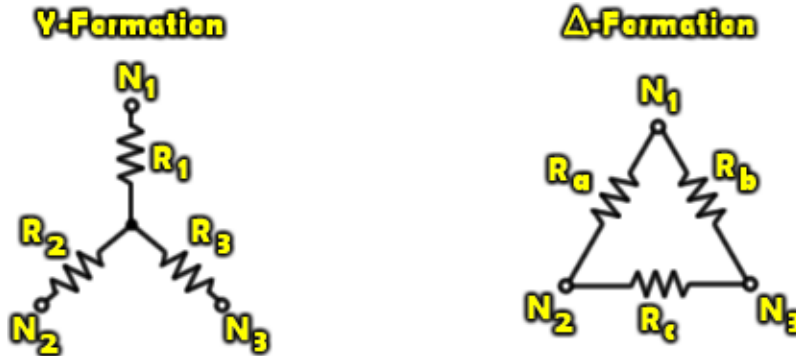


Y-Δ Transform

The Y-Δ transformation is sometimes called the Y-Delta, Wye-Delta, Kennelly's Delta-Star Transformation, Star-Mesh Transformation, T-Π or T-Pi Transform. It is a circuit transformation technique that simplifies an electrical network. You can interchange between the following resistor formations when you encounter them in a circuit:



I will define the resistance between two nodes N_x and N_y , as $R(N_x, N_y)$. Consider the following:

$$R(N_1, N_2) = R_1 + R_2 = R_a \parallel (R_b + R_c)$$

$$R(N_1, N_3) = R_1 + R_3 = R_b \parallel (R_a + R_c)$$

$$R(N_2, N_3) = R_2 + R_3 = R_c \parallel (R_a + R_b)$$

Note how, as an example, for $R(N_1, N_2) = R_1 + R_2$, R_3 is not part of this equation because it is neither in parallel nor in series with the other resistors (R_1 and R_2) on the path from N_1 to N_2 . Thus, in conclusion, the three formulas above may be used interchangeably to produce equivalent circuit formations.