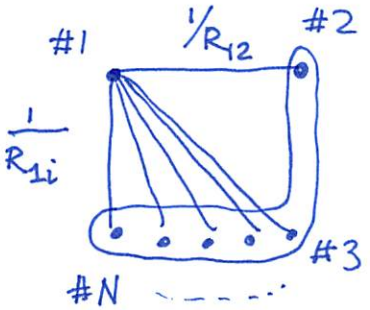
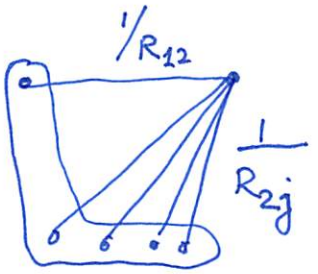
Solution by Chris McLauchlin

14.XII.22



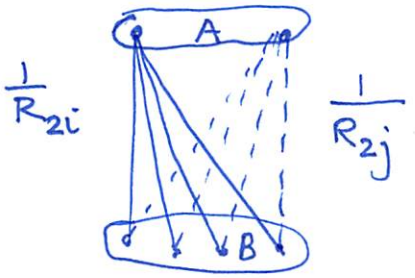
$$\frac{1}{r_1} = \frac{1}{R_{12}} + \sum_3^N \frac{1}{R_{1i}}$$

a) Connect all nodes #2 ... #N. Measure resistance between #1 and connected nodes



$$\frac{1}{r_2} = \frac{1}{R_{12}} + \sum_3^N \frac{1}{R_{2j}}$$

b) Same for connected #1, #3, ... #N



$$\frac{1}{r_3} = \sum_3^N \frac{1}{R_{1i}} + \sum_3^N \frac{1}{R_{2j}}$$

c) Connect #1 and #2 → "terminal A"
Connect #3, #4 ... #N → "terminal B"
Measure resistance between A and B

Altogether:

$$\boxed{\frac{1}{r_1} + \frac{1}{r_2} - \frac{1}{r_3} = \frac{2}{R_{21}}.}$$ — solve for R_{12}