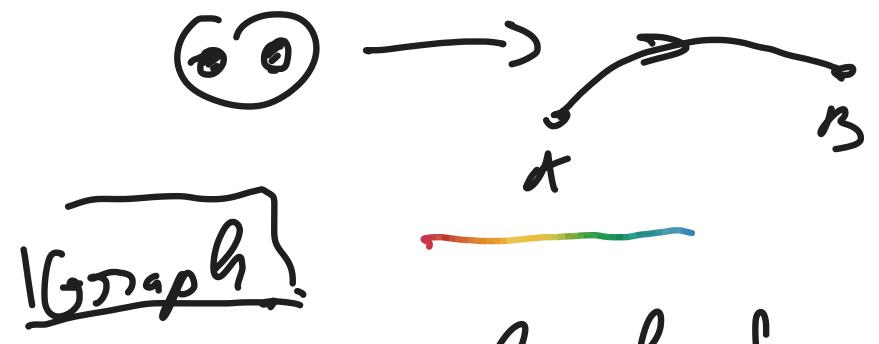


Topology of electrical circuits.

a set of connected elem...:

1. two terminals = one bound elements



The graph of circuit is a set of points (nodes), which are the terminals of the elements connected by orientated curves, named branches, which are the circuit elements.

graph of circuit.

= -

ii. Branch.

(b) $b = 1, 2, \dots, B$.

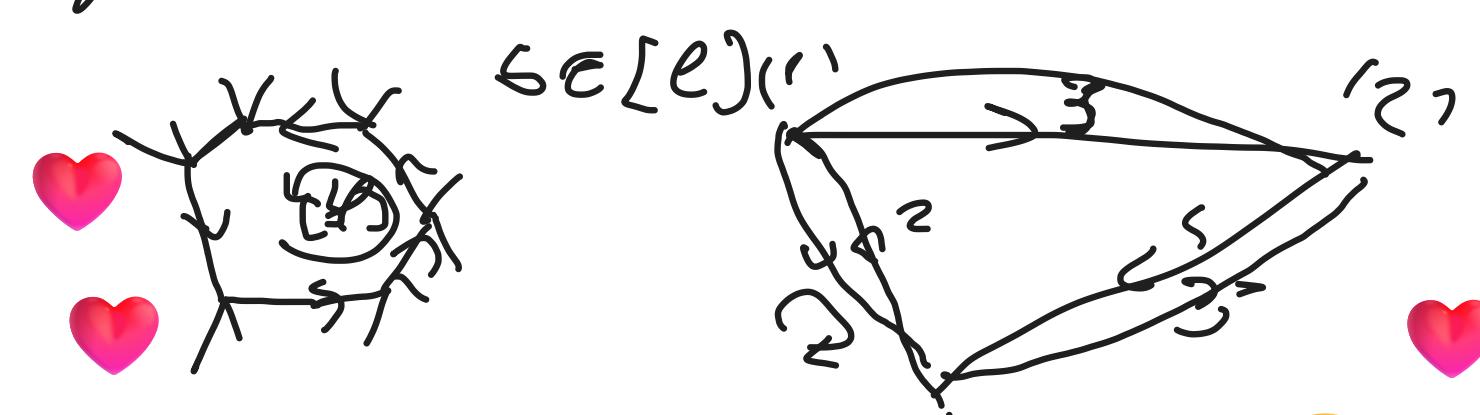
A node is the clearing point of at least 3 branches

Node
(m), $m \in [N]$.

If branch is incident to a node(m)

~~if~~ $b \in \{n_1, n_2, \dots, n_B\} \cap m$

loop

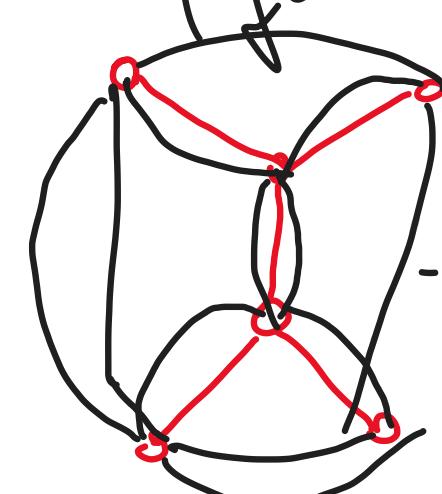


$I \in \{1\}$ $S \in \{1\}$

$S \in \{3\}$

$\{1\}$ (domain that cuts)
and $\{3\}$ (then the cables)

Tree
Formed by twigs) / $N-1$ twigs.



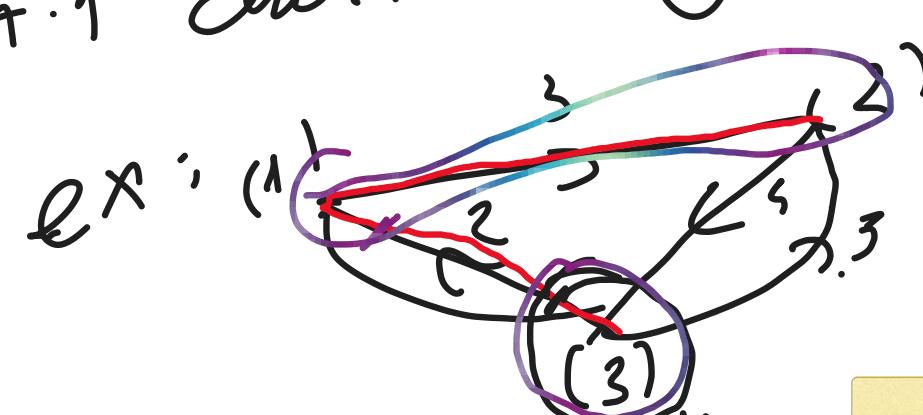
Co-tree

The twig generates a section, so in one cutset is one twig, the rest of the branches are chords.

1 chord \rightarrow 1 loop.

The portion of cutset generated by twigs represents a sys of fundamental sections. So, $N-1 \rightarrow N-1$ sections

sys of loops rep. a sys of inductors
 $B-N+1$ chord will generate $B-N$ loops.



$N=3$

$B=5$

$\{1\} = \{1, 2, 3\}$
 $\{1\} = \{3, 4, 5\}$

$\{1\} = \{1, 2\}$

Special rules:
choose a tree : $\binom{N-1}{N-F}$ twigs

$N-1$ twigs $\rightarrow N-1$ sections.

