Voltage and Current Sources
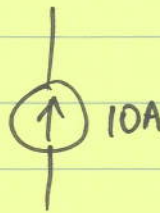
Two types : { independent sources
{ dependent sources.

(A) Independent Sources :

These are the ordinary voltage & current sources.
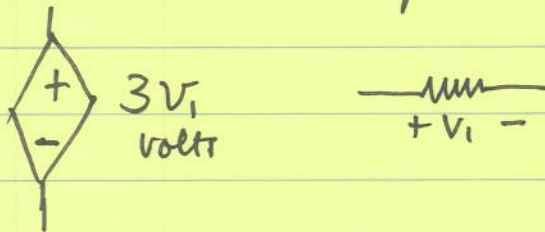

Independent Voltage Source   Independent Current Source.
(makes 12 volts)   (makes 10 amps)
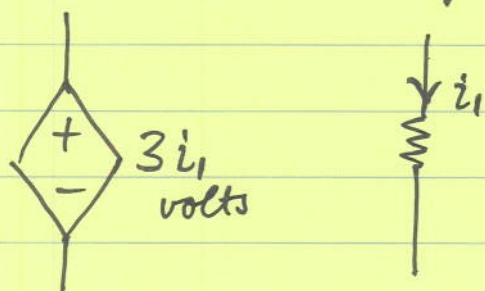
(B) Dependent Sources :

These are more complicated because they generate
a voltage or current whose value <u>depends</u> upon
a voltage or current <u>somewhere else</u> in the circuit.
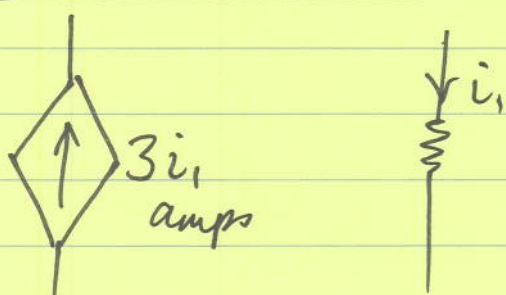
Voltage - Controlled Voltage Source :

$3V_1$ volts $+ V_1 -$

This source makes a <u>voltage</u> equal to $3V_1$, where
V_1 is the voltage indicated.
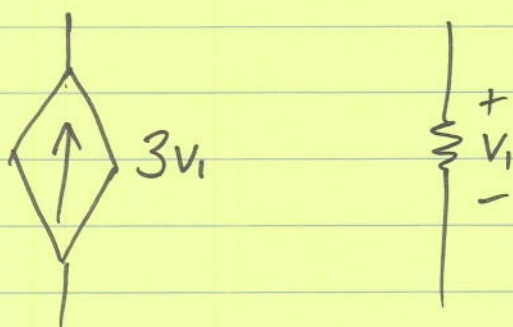
Current - Controlled Voltage Source:

This source makes a __voltage__ equal to $3i_1$ volts, where i_1 is the current indicated.

Current - Controlled Current Source:

This source makes a __current__ equal to $3i_1$ amps, where i_1 is the current indicated.

Voltage - Controlled Current Source:

This source makes a __current__ equal to $3v_1$ amps, where v_1 is the voltage indicated.