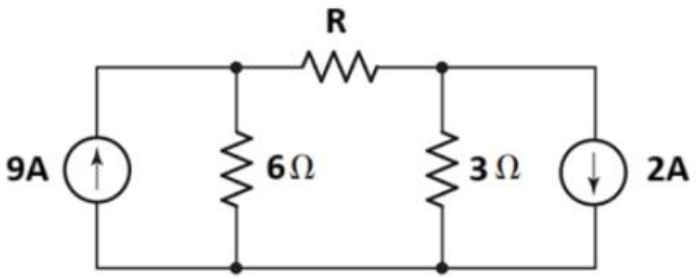
Notes Class - 16

Example: In the given network,apply Thevinin's Theorem and determine the range of current through R as it varies between 1Ω and 10Ω



ii)

Finding V_{TH}:

Removing Load resistance R, an open circuit is created.

Voltage across the open circuit, $V_{TH} = 9*6 + 3*2 = 60V$

Finding R_{TH}:

Removing R and replacing both current sources with open circuit,

R_{TH} = 6Ω *and* 3Ω *in series* = 9Ω

Finding Load current range:

$$I_L = \frac{V_{TH}}{R_{TH} + R_L}$$

When $R = 1\Omega$, $I_L = 6A$

When $R = 10\Omega$, $I_L = 3.15A$

Hence range of current = 3.15*A to* 6*A*