

Sol: - 1) Thevenin's Theorem

considering
$$(2-j)$$
-2 as $R_{L_{j}}$

$$(2-j)$$
-1 A

$$(2-j)$$
-1 A

$$(2+j)$$

Using KCL at b, i = (1-2j)A

$$\frac{0-V}{2+j} = 1-2j \quad \Rightarrow \quad V = -4+3j$$

$$\frac{\sqrt{-\sqrt{4h}}}{-5j} = 1 \Rightarrow \sqrt{\sqrt{4h}} = -4+8j$$

Replacing all sources by their internal impedences,

1/4 (-5j) n -2jA

1/4 (2+j) n Nth (2+j) n Nth (2+j) n Nth (2-4) n Nth (2-

Considering
$$2+j$$
 as $R_{L_{1}}$ V_{2} V_{3} V_{4} $V_{$

using kcl at a,
$$\frac{O-V}{2-j} = 1-2j$$

$$\frac{V+h-V}{-5j} = -2j$$

$$\frac{V+h-V}{-5j} = -2j$$

$$\frac{V+h-V}{-5j} = -5j-10$$

Replacing all the sources by their internal impredences

(-5j)r

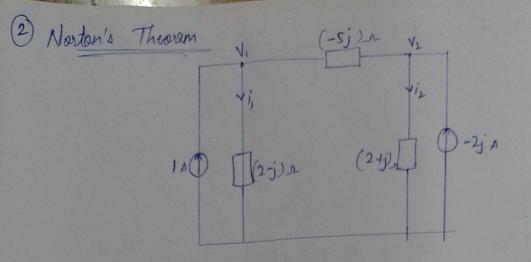
(-5j)r

(2-6j)r

Vinj

Theresia's equivalent circuit, $\Rightarrow \begin{bmatrix} \frac{1}{2} = 40 - 45i \\ 29 \end{bmatrix}$

$$V_2 = 125 - 50i \text{ V}$$

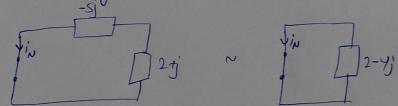


Using current divisor rule, at b,

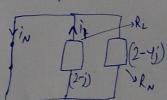
$$i = (-2j) \left(\frac{2+j}{2-y_j} \right)$$

$$\Rightarrow i=1A \qquad i = 2A$$

Replacing all sources by their internal impedences,



Norton's equivalent circuit,



current through
$$R_L \Rightarrow i_L = 2\left(\frac{2-y_i}{y-s_j}\right)$$

$$= \sqrt{i_L} = \frac{-5b+12i}{y_0} A$$

$$V_{i} = i_{1}(20)$$

$$\Rightarrow V_{1} = -100+80; V$$

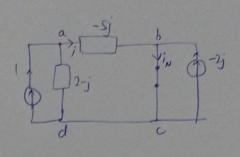
$$41$$

24 0 -2

Constolering
$$(2+j)$$
 as RL,

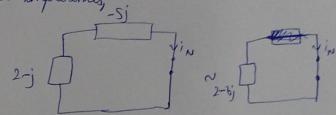
Applying current divisor rule at a,

 $i = 1(\frac{2-j}{2-6j}) \Rightarrow i = \frac{1+j}{4}$



	1/N =	1-	1
1		4	
- (1	

Replacing all sources with their internal impedences, -si



Norton's equivalent circuit,

2+j 1/2 - 5/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2 | 2-6/1/2

Current through
$$R_{\mu}$$
, $i_2 = \left(\frac{1-7j}{4}\right)\left(\frac{2-5j}{2-5j}\right)$

$$=$$
 $\frac{1}{2} = \frac{40 - 45iA}{29}$

$$=)$$
 $V_2 = 125 - 501 V$ $\frac{29}{29}$