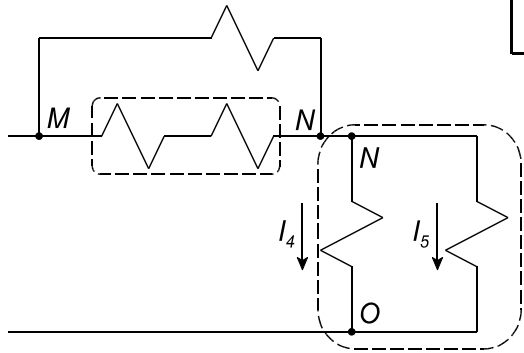
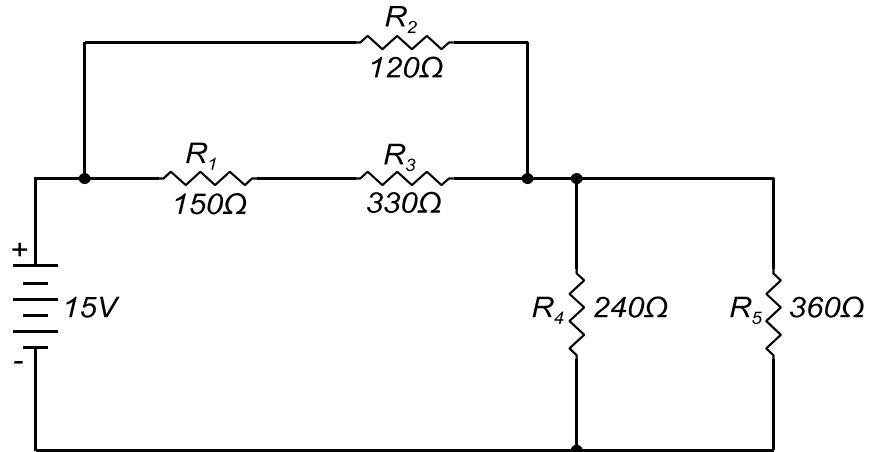


**ELECTROTECHNOLOGY**  
**ELTK1100**  
**QUIZ #3**  
**SOLUTIONS**

For the circuit shown, determine:  $I_T$ ,  $V_3$ ,  $I_2$ ,  $I_5$ .

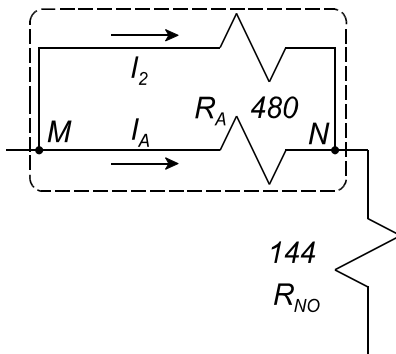


$$I_4 = \frac{R_{NO}}{R_4} * I_T = \frac{144 \Omega}{240 \Omega} * 62.5 \text{ mA} = 37.5 \text{ mA} \quad 5$$

$$I_5 = \frac{R_{NO}}{R_5} * I_T = \frac{144 \Omega}{360 \Omega} * 62.5 \text{ mA} = 25 \text{ mA} \quad 6$$

$$150 \text{ s } 330 = 480 = R_A$$

$$240 \parallel 360 = \frac{240 * 360}{(240 + 360)} = 144 = R_{NO}$$

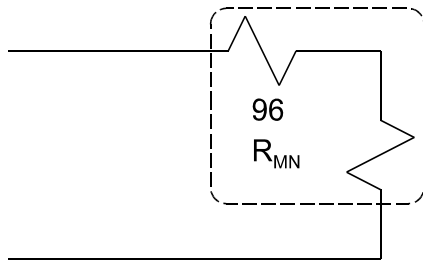


$$I_2 = \frac{R_{MN}}{R_2} * I_T = \frac{96 \Omega}{120 \Omega} * 62.5 \text{ mA} = 50 \text{ mA} \quad 3$$

$$I_A = \frac{R_{MN}}{R_A} * I_T = \frac{96 \Omega}{480 \Omega} * 62.5 \text{ mA} = 12.5 \text{ mA} \quad 4$$

$$V_3 = I_3 * R_3 = 12.5 \text{ mA} * 330 \Omega = 4.13 \text{ V} \quad 7$$

$$120 \parallel 480 = \frac{120 * 480}{(120 + 480)} = 96 = R_{MN}$$



$$144 \text{ s } 96 = 240$$

$$R_T = 240 \Omega \quad ^1$$

$$I_T = \frac{V_T}{R_T} = \frac{15V}{240\Omega} = 0.0625A = 62.5 \text{ mA.} \quad ^2$$

	V (V)	I (mA)	R ( $\Omega$ )
<b>T</b>	<b>15</b>	$62.5^2$	$240^1$
<b>1</b>	1.87	$12.5^4$	<b>150</b>
<b>2</b>	6	$50^3$	<b>120</b>
<b>3</b>	$4.13^7$	$12.5^4$	<b>330</b>
<b>4</b>	9	$37.5^5$	<b>240</b>
<b>5</b>	9	$25^6$	<b>360</b>