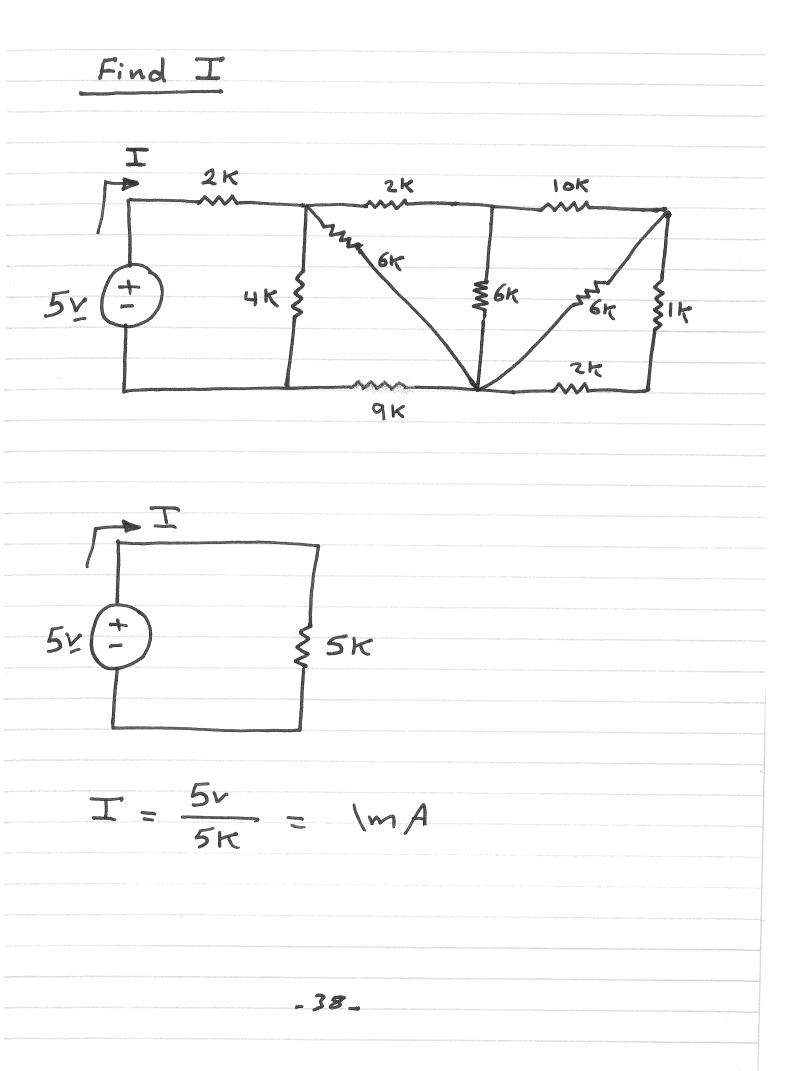


Resistors in ParalleL , Is 4 RI Vs ( ξ Rz R, Is Vs ( Reg  $+ \frac{1}{R_2} + \frac{1}{R_2}$ RI Req \_35\_

Two Resistors in Pavallel Reg = RillRz  $Req = \frac{R_1 R_2}{R_1 + R_2}$  $0.5\min(R_1,R_1) < R_1 \| R_2 < \min(R_1,R_1)$ \_ 36\_ Uploaded By: Jibreel Bornat STUDENTS-HUB.com

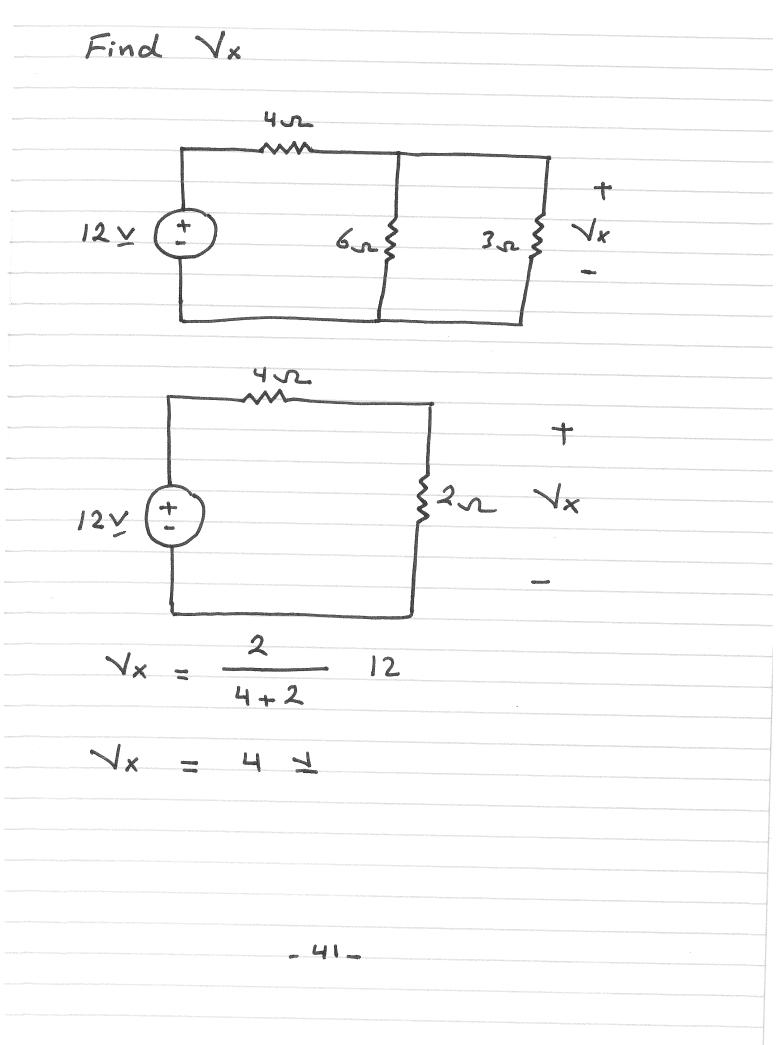
and the second second

Find Vx 7.2 2 Gr t 642 Vx 2302 5A ( 102 5A X 122  $\forall x = (5)(12) = 60$ 162/164 = 12.82 202 130 = 122 - 37-



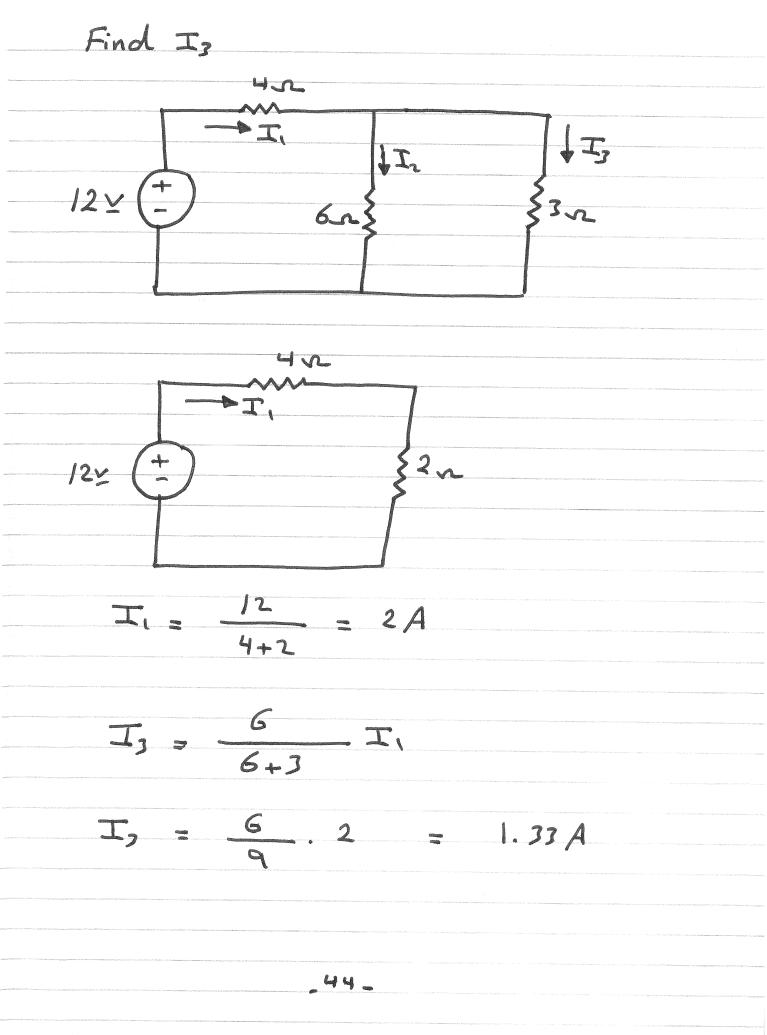
Voltage Divider Rule RI ζ Rz  $\mathbf{x}$ RI V× RI+ Rr R2 R1+R2 V× 2 - 39\_ Uploaded By: Jibreel Bornat STUDENTS-HUB.com

R  $\checkmark$ + Nx Rz KVL 1  $\sqrt{1 + \sqrt{2}}$ Vx = 1× RII + RII  $\frac{\sqrt{x}}{R_1+R_2}$ T . . -RI = RII Vx  $\overline{\nabla}$ Ri+ Ri  $V_2 = R_1 I = \frac{R_2}{\sqrt{x}}$ Ri+Ri \_ 40 \_



Cu	rvent Divi	der Rule
	↓I, \$R,	J.I. S.R.
	$R_2$ $R_1 + R_2$	T <sub>×</sub>
	$R_1$ $R_1 + R_2$	
	- 42	
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Tx afe 1 32 FI, ٧x R. Re KCL 0 Ix I, + T2 V× Ix R Rz Rikz Ix  $\sqrt{x}$ **4** RI+R2  $\frac{R_2}{R_{1+}R_2}$ 1× I, Tx RI RI 1× I, Ix -Ri RI+R2 \_43\_



Find No	
0.9mA () 60K \$	40K 40K 80K Vo
$\frac{50 \text{ K}}{50 \text{ K} + (40 \text{ K} + 80 \text{ K})}$	0.9 m/
$T_{o} = 0.3 m A$	
No = Sok Io	

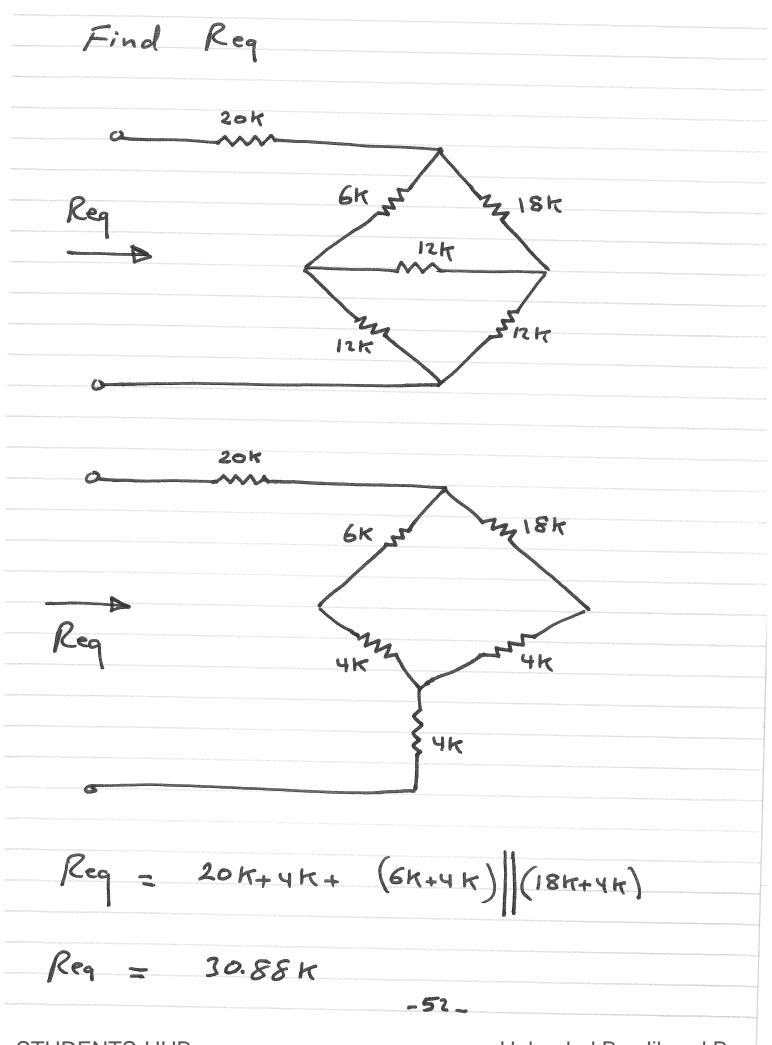
Find Io I. 18K ξ9ĸ SIZK SIZK 4mA 2mA I. SIZK ImA Syk 18× 9× 112k = 4k 44 I. : - ImA 4++12k  $T_{o} = -0.25 m A$ \_46\_

Find the power supplied by the 0.9 ix source ίx 0.9ix 6A 44 X 2Ao.gix 2 + 0.9 ix= ix+?  $ix = \frac{\sqrt{x}}{3}$ : 1x = 10x ; ix = 10A Pogix = - (0.9ix) x = - Jow Supplying Uploaded By: Jibreel Bornat STUDENTS-HUB.com

Delta - Wye Transformation , 9 R Rz Ra 6 Re Rb  $\boldsymbol{<}$ R3 b R1 (R1+R3) Rab = Ra+ Rb RI+ RI+ RJ R3 (R1+R1) Rbc = Rb+Rc RI+R1+R2  $R_1(R_1+R_3)$ Rc+ Ra = Rea =  $R_1 + R_2 + R_2$ Solving this set of equations RIRZ Ra Ri+ Rz+ Rz R2R3 Rb RI+R2+R7 R3 R1 Re RI+ Ri+ Ry - 49 Uploaded By: Jibreel Bornat STUDENTS-HUB.com

Ra Rb + RbRc+ Rc Ra  $R_1 =$ Rb Ra Rb + Rb Rc+ Re Ra Rz 6000g Re Ra Rb+ RbRc+ Rc Ra R3 Ra Q a Ri Rz Ra Re R, - 50 -

For the balanced Case where Ra = Rb = Rc = Ry  $R_1 = R_2 = R_3 = R_0$ Ro= 3 Ry Ry = 1 Rs - 51 Uploaded By: Jibreel Bornat STUDENTS-HUB.com



Design Given Iy = 0.5 mA, Find Vs 6K 3K I I ZK Vb \$1K Vs 3K \$ 13 I4 \$ 6K Va I, 4K Na = (6Kn)(0.5mA) = 3V  $T_3 = \frac{Na}{2\pi} = \frac{1}{2\pi}$ I2 = I2 + I4 = 1.5 mA Nb = (2Kn)(1.5mA) = 32  $I_5 = \frac{\sqrt{a+b}}{44} = 1.5 \text{ mA}$  $T_1 = T_{2+} T_5 = 3mA$ Ns = (10K2) II + Nb + Na = 36V - 53 -Uploaded By: Jibreel Bornat STUDENTS-HUB.com

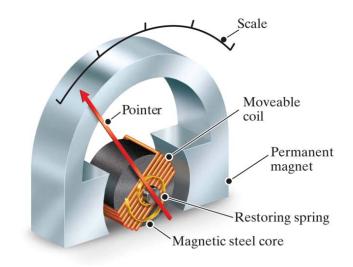
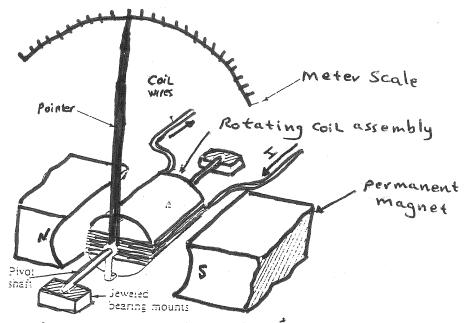
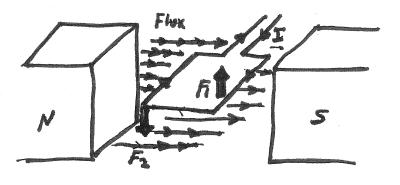


Figure 3.23 A schematic diagram of a d'Arsonval meter movement.



Basic components of a DArsonval movement



FI = F2 = IRB

T = IQBd

If the Coil has N terns T = IlBNd

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The D'Arsonval meter movement If a current is passed through the movable Coil, the resulting magnetic field reacts with the magnetic field of the permanent magnet producing a torque which is counterbalanced by a restoring spring. The deflection of the pointer attached to the Coil is proportional to the Current Produced by the quantity being measured. 55

	Measuri	ing Volto	ge and Cur	vent
		$R_1$ (A)		
	(+) Vs		ŞR2	
Amn	neter :	designe	d to measu	re Current
Nolt~	neter :	ייייייייע אונער איז	l to measur	
		56		
<sup>299</sup> 4522495492999999495552525994925229949493444452520454242444452	Land data wata yang tala tala talah talah tagi talah tagi pertakan kalakaren Jata kalakaren bata			

DC Ammeter Ish t Rsh Rm, Im Rsh Ish = Rm Im Rsh = Rm Im Ish = Rm Im I-Im -57\_

A O-ImA meter movement with an internal resistance of 100 n is to be Converted to a O-100mA Ammeter Im: ImA Rm = 100 r I = 100mA Ish = 99 m A  $Rsh = \frac{TmRm}{T-Tm} = 1.01 \text{ sc}$ - 58\_

Dc N	oltmeter	
	Rs	
	Rm,	Im
	= Rs Im + Rm Im	ROWER TOTOLOGICAL STATES
Rs =	V - Rm Im Im	
		1979-1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1979 - 1 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 - 1977 -
		anaton alam ing generation for a menupuk terupakan anaton alam ing generation for a menupuk terupakan
		9099 0799 0797 0797 0799 0799 0799 0799
	- 59 -	zak (gant) kaj matematika (kan kaj matematika) Lan na senara (kan kaj matematika)

A basic D'Arsonval movement with Im = Im A and Rm = 100 r is to be converted into a de roltmeter With the range 0-101  $R_{s} = \frac{V - R_{m} I_{m}}{T_{m}}$  $= 10 - (100)(1 \times 10^{3})$ 1 × 10-7 Rs = 9900 r - 60

Measuring Resistance Wheatstore Bridge Tin Vs Rs is adjusted until Im=0 Bridge is balanced : II = I, In: Ix Vm = O R, I,- RIII R, I, Rx Ix R. I. R×Ix  $\frac{R_1 T_1}{R_1 T_2} =$  $R_{X} = \frac{R_{1}R_{2}}{R_{1}}$  $= \frac{R_2}{R_X}$ R -61-STUDENTS-HUB.com Uploaded By: Jibreel Bornat