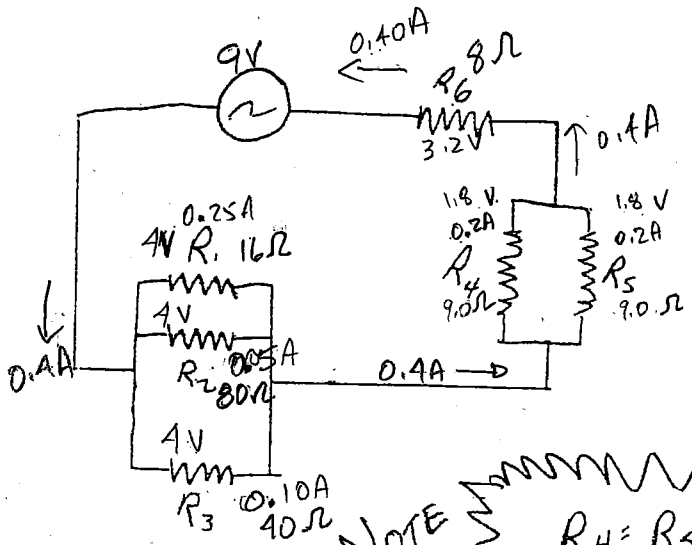
Key

Calculate the missing values in the circuits below

1.)

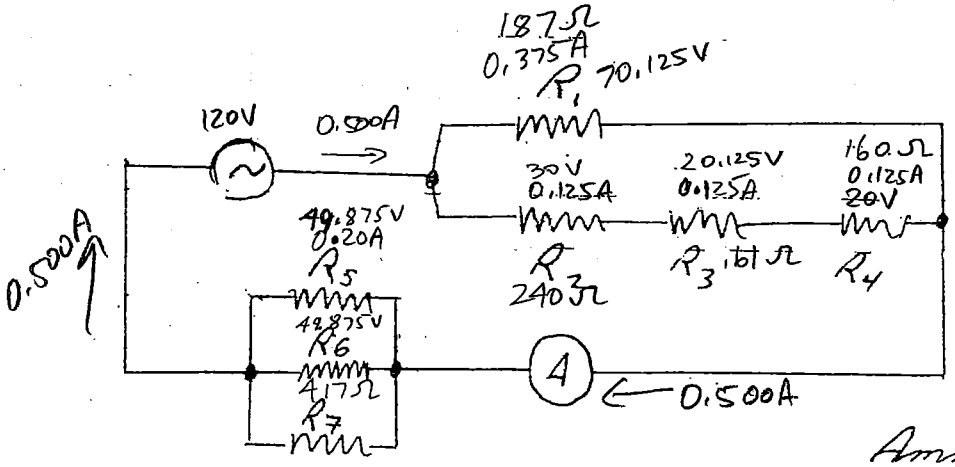


NOTE $R_4 = R_5$, $R_3 = 2R_2$

$V = IR$ / $9 = (0.40)(R) = 22.5\Omega$

$V_0 = 9V$ $I_0 = 0.4A$
$V_1 = 4V$ $I_1 = 0.25A$
$V_2 = 4V$ $I_2 = 0.05A$
$V_3 = 4V$ $I_3 = 0.10A$
$V_4 = 0.9V$ $I_4 = 0.2A$
$V_5 = 0.9V$ $I_5 = 0.2A$
$V_6 = 3.2V$ $I_6 = 0.40A$

2.)



Ammeter reads 0.500 A

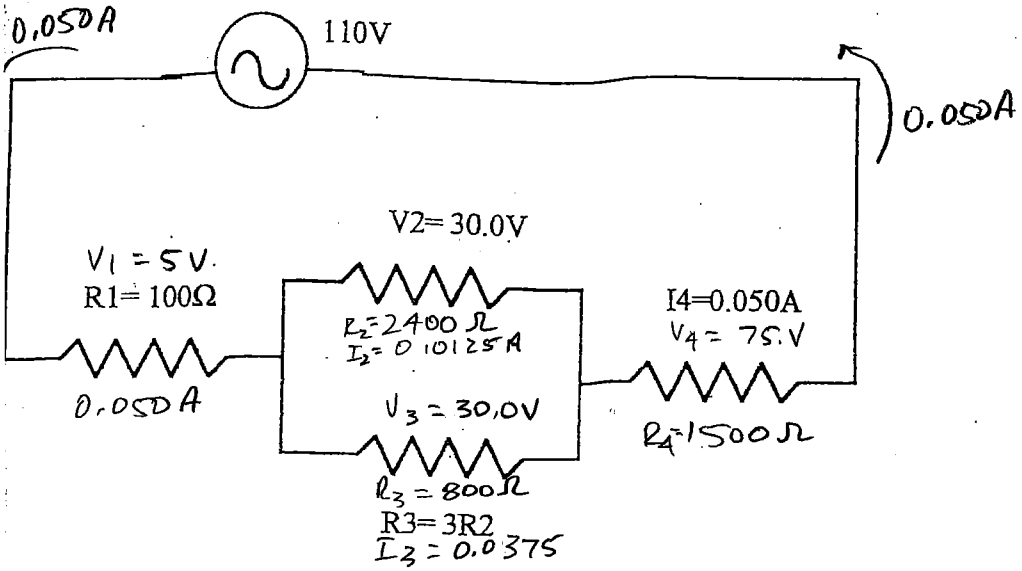
$V_0 = 120V$ $I_0 = 0.500A$ $R_0 = 240\Omega$
$V_1 = 70.125V$ $I_1 = 0.375A$ $R_1 = 187\Omega$
$V_2 = 30V$ $I_2 = 0.125$ $R_2 = 240\Omega$
$V_3 = 20.125V$ $I_3 = 0.125A$ $R_3 = 161\Omega$
$V_4 = 20V$ $I_4 = 0.125A$ $R_4 = 160\Omega$
$V_5 = 49.875V$ $I_5 = 0.2A$ $R_5 = 249.375\Omega$
$V_6 = 49.875V$ $I_6 = 0.12A$ $R_6 = 417\Omega$
$V_7 = 49.875V$ $I_7 = 0.18$ $R_7 = 277.1\Omega$

$R_1, R_2, R_3, R_4 = 140.25\Omega$
R_T

$R_5, R_6, R_7 = 240 - 140.25$
$= 99.75\Omega$

NAME_____

Analyse the following circuits using the given information.



V_0= 110 V	I_0= 0.050A	R_0= 2200Ω
V1= 5.0 V	I1= 0.050A	R1= 100Ω
V2= 30.0 V	I2= 0.0125A	R2= 2400 Ω
V3= 30.0 V	I3= 0.0375A	R3= 800Ω.
V4= 75.0 V	I4= 0.050A.	R4= 1500Ω

$R_2 + R_3 = 600\Omega$

$$\frac{1}{600} = \frac{3}{R_3} + \frac{1}{3 \cdot R_2}$$

$$\frac{1}{600} = \frac{3}{3R_3} + \frac{1}{3R_2}$$

$$3 \times \frac{1}{600} = \frac{4}{3R_3} \times 3$$

$$\frac{3}{600} = \frac{4}{R_3} \quad / \quad \frac{600}{3} = \frac{R_3}{4} \times 4$$

$$\frac{2400}{3} = R_3 \quad / \quad R_3 = 800$$