Name: _____
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ID No : _____

RMIT UNIVERSITY

Future Technologies Industry Cluster
College of VE, RMIT University
AD026
Electrical Principles EEET 2276

Tutorial # 02c

Kerchhoff's Voltage and Current Laws
Voltage division in series circuits

1. For the diagram shown bellow, state the value of the current I which flows in the circuit if the V_{AB} equals to 12 V. (show all calculation)
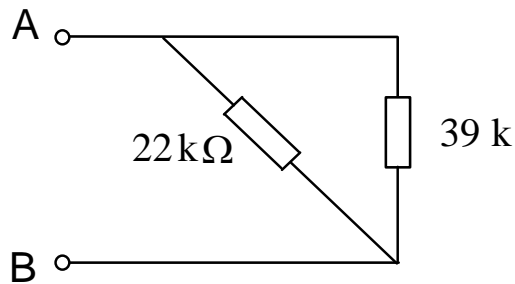
A

22 kΩ 39 k

B

Fig 1

Calculation

2.   a.   For the circuit shown in Fig 2:

$$+ \; 2V \; - \quad + \; 5V \; - \quad + \quad V \; -$$

$$10\Omega \quad\quad\quad\quad\quad\quad\quad$$

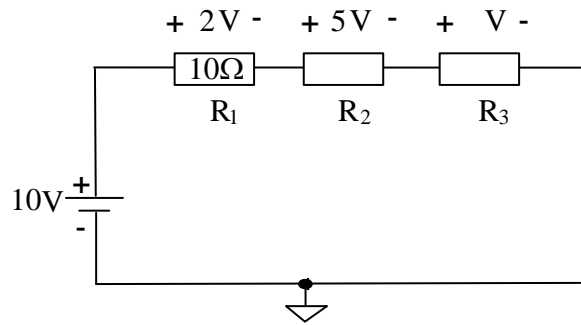$$R_1 \quad\quad\quad R_2 \quad\quad\quad R_3$$

$$10V$$

Fig 2

(i)   Determine the unknown voltage.

(ii)   Determine the values of the unknown resistors (R_2 and R_3).

b.   For the circuit shown in Fig 3:

$$+ \quad V \quad - \quad\quad\quad\quad 6\,V$$

$$R_1 \quad\quad\quad\quad - \; | \; +$$

$$+$$

$$R_2 \; 2\,V$$

$$15V$$

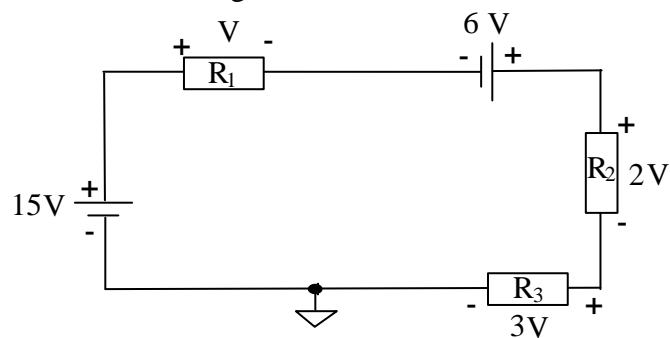$$-$$

$$- \quad R_3 \quad +$$

$$3\,V$$

Fig 3

Determine the unknown voltage.
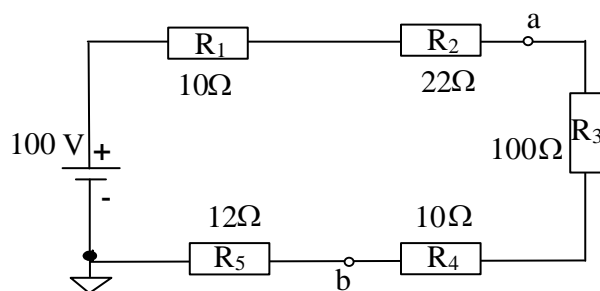
3.   a.   For the circuit shown in Fig 4:

Fig 4

using the voltage divider rule, determine the voltage between a and b.
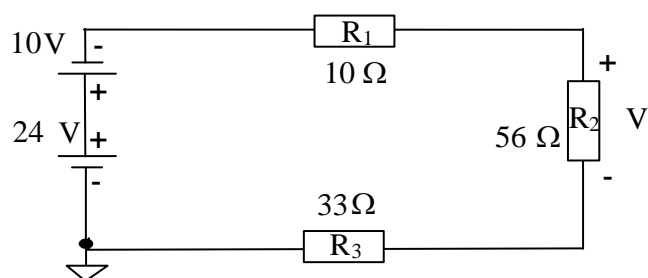
b.   For the circuit shown in Fig 5:

Fig 5

using the voltage divider rule, determine the voltage V.