

## CLASS EXERCISE # 7 - 27 JUNE 2005

$R$	$I$	$\Delta V$
$5 \Omega$	$3 \text{ A}$	$15 \text{ V}$
$3 \Omega$	$2 \text{ A}$	$6 \text{ V}$
$3 \Omega$	$4 \text{ A}$	$12 \text{ V}$

Answer these questions using Ohm's law and also fill out the table above:

(1) Determine the potential difference across a 5-ohm resistor through which a current of 3 amperes is flowing.

$$\Delta V = IR = (3 \text{ A})(5 \Omega) = 15 \text{ V}.$$

(2) Determine the current flowing through a 3-ohm resistor if the electric potentials at its ends are 18 V and 12 V.

Rewrite  $\Delta V = IR$  into

$$I = (\Delta V)/R = (18 \text{ V} - 12 \text{ V})/(3 \Omega) = 2 \text{ A}.$$

(3) Determine the resistance between two points if an ammeter measures a current of 4 amperes between them and a voltmeter measures a potential difference of 12 volts between them.

Rewrite  $\Delta V = IR$  into

$$R = (\Delta V)/I = (12 \text{ V})/(4 \text{ A}) = 3 \Omega.$$