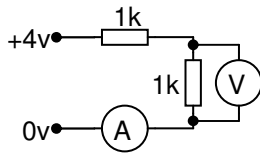


## Questions on Potential Dividers

### Q1

What would you expect the readings to be on the ammeter and voltmeter in the circuit below?



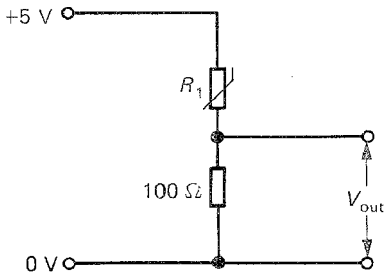
### Q2

For the general potential divider, calculate the output voltage  $V_{out}$  across  $R_{bottom}$  when the values of the input voltage  $V_{in}$ ,  $R_{top}$ , and  $R_{bottom}$  are those in the table below.

	(a)	(b)	(c)	(d)
$V_{in}$	4V	6V	9V	10V
$R_{top}$	2 k	10 k	2 k	3 k
$R_{bottom}$	2 k	20 k	1 k	2 k
$V_{out}$				

### Q3

If the thermistor in the diagram has a resistance  $R_1$  of 400 $\Omega$  at 20°C and 100 $\Omega$  at 70°C, calculate  $V_{out}$  at (a) 20°C, (b) 70°C.



### Q4

Fill in the missing values in the following table based on potential divider circuits if an LDR has a resistance of 1k in the light and 1M in the dark. For parts (a) and (f) use the nearest E12 preferred value.

	$V_{in}$	$R_{top}$	$R_{bottom}$	$V_{out}$
(a)	9V		10k	1V
(b)	9V	100 k	LDR lit	
(c)	9V	100 k	LDR dark	
(d)	5V	LDR lit	10k	
(e)	5V	LDR dark	100k	
(f)	12V	6.8k		5V

### Q5

Use Ohms Law to fill in the missing values in the table below.

	$V_{in}$	$R_{top}$	$R_{bottom}$	$V_{out}$
(a)	9V	10k	Switch Open	
(b)	9V	Switch Open	10k	
(c)	9V	10k	Switch Closed	
(d)	9V	Switch Closed	10k	

### Q6

In the diagram below, if the lamps all have the same resistance, what do the three voltmeters read?

