

1 Link each **component** to what it **senses**.

component
LDR
thermistor
linear potentiometer
rotary potentiometer

senses
angle
position
illumination
temperature

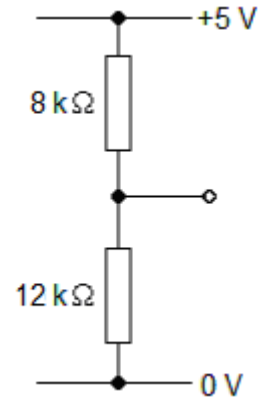
2 Complete the sentences for this circuit.
Choose from these numbers.

2 3 5 8 12 20 250

The total resistance is _____ kΩ.

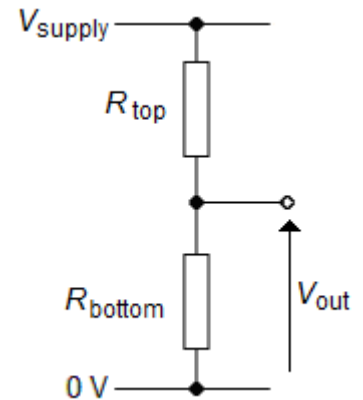
The current in each resistor is _____ μA.

The voltage drop across the 12 kΩ resistor is _____ V.

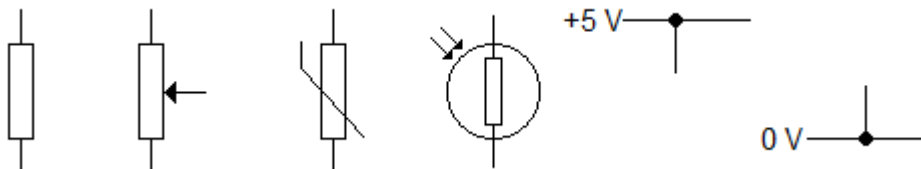


3 Complete the table for this circuit.

$V_{\text{supply}} / \text{V}$	$R_{\text{top}} / \text{k}\Omega$	$R_{\text{bottom}} / \text{k}\Omega$	$V_{\text{out}} / \text{V}$
5	4	3	
6	12	9	
9	33	47	
12	27	68	
15	22	100	



4 Use these components to make sensor circuits with the behaviour described below.



constant 2.5 V
low output when cold
adjustable from 5 V to 0 V
high output in bright illumination

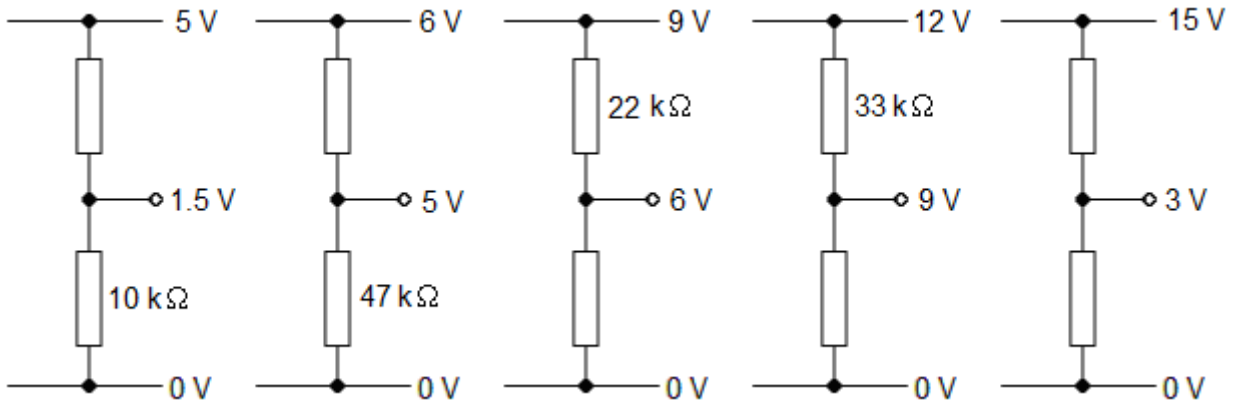
5 Complete these circuits with resistor values. Choose the best values from this list.

10 kΩ

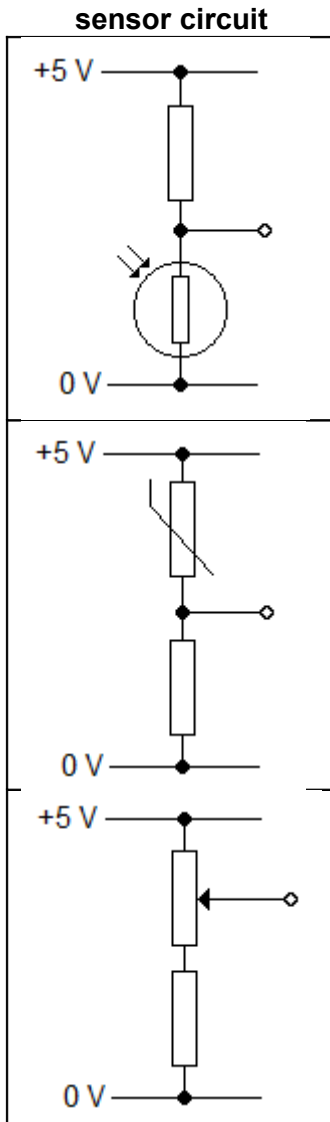
22 kΩ

47 kΩ

100 kΩ



6 Link each sensor circuit to its transfer characteristic.



transfer characteristic

output voltage remains constant

output voltage rises with increasing angle

output voltage falls with increasing illumination

output voltage rises with increasing illumination

output voltage falls with increasing temperature

output voltage rises with increasing temperature