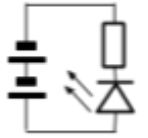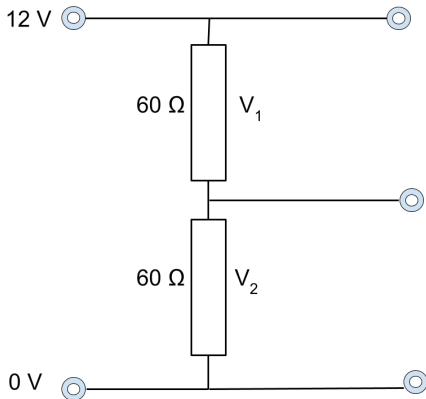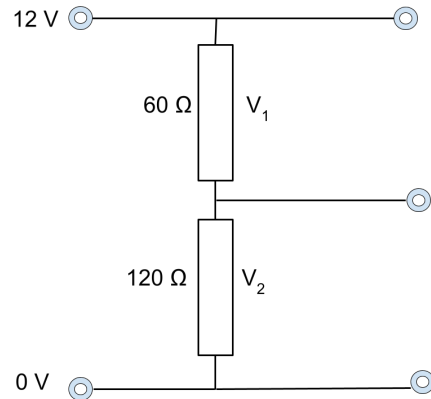# Voltage Dividers

Space School

In the following voltage divider circuits or, as they are otherwise called, potential divider circuits, find the missing quantity in each practice question.
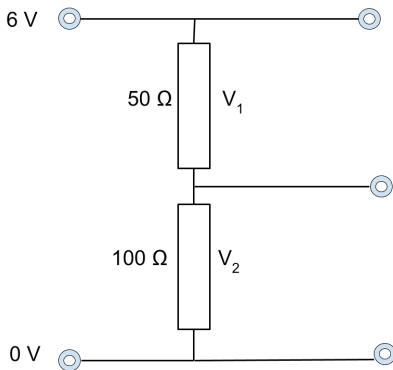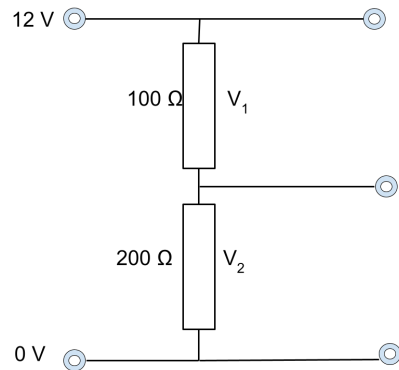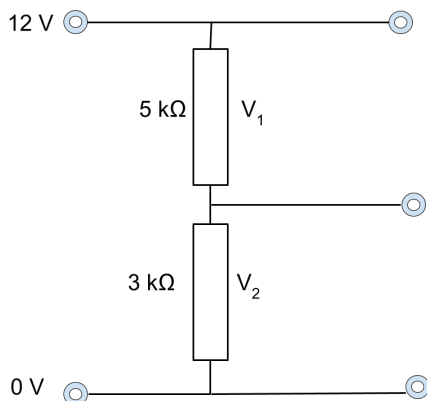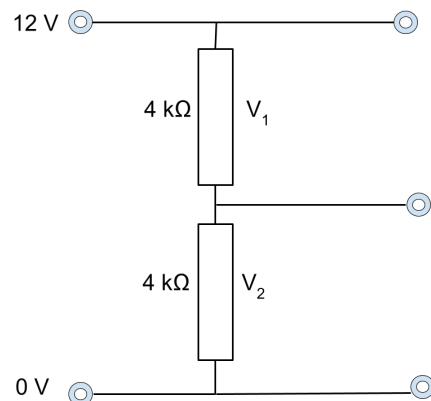
(1)

12 V

60 Ω V_1

60 Ω V_2

0 V

(2)

12 V

60 Ω V_1

120 Ω V_2

0 V

(3)

6 V

50 Ω V_1

100 Ω V_2

0 V

(4)

12 V

100 Ω V_1

200 Ω V_2

0 V

(5)

12 V

5 kΩ V_1

3 kΩ V_2

0 V

(6)

12 V

4 kΩ V_1

4 kΩ V_2

0 V

(7)

V_S

8 Ω   6 V

16 Ω V_2

0 V

(8)

V_S

3 Ω   2 V

15 Ω V_2

0 V

(9)

V_S

12 Ω   2 V

R Ω   6 V

0 V

(10)

V_S

9 kΩ   6 V

R Ω   2 V

0 V
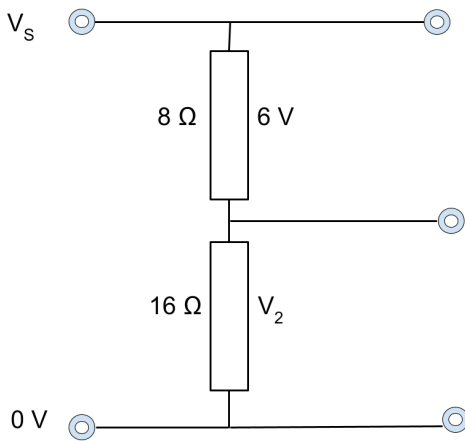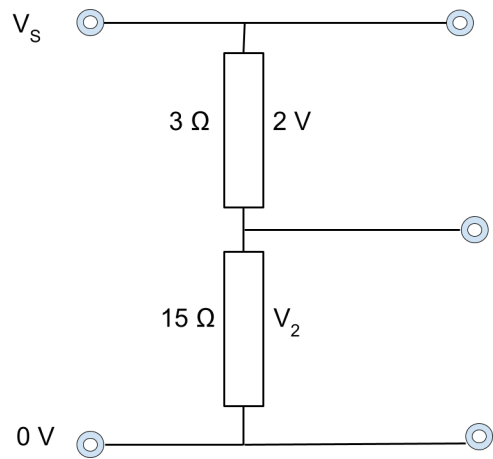
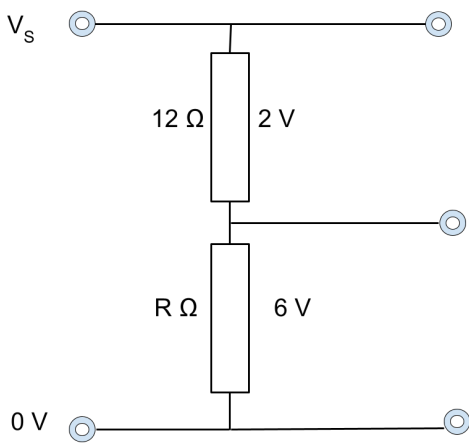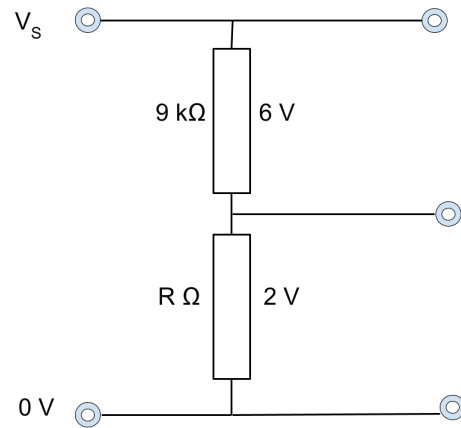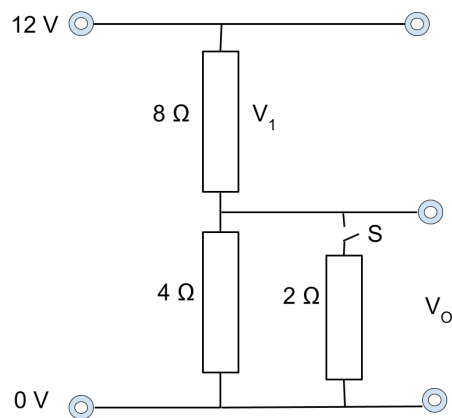**(11)** A potential divider circuit is shown below.
Determine the output voltage when switch S is open and then when switch S is closed.

12 V

8 Ω V_1

S

4 Ω   2 Ω V_o

0 V

Answers:

(1) V_1=6V V_2 = 6V

(2) V_1=4V V_2 =8V

(3) V_1=2V V_2=4V

(4) V_1=4V V_2=8

(5) V_1=7.5V V_2=4.5V

(6) V_1=6V V_2= 6V

(7) V_2=12 V_S=18V

(8) V_2=10V

(9) R = 36Ω V_S=8V

(10) R=3Ω V_S=8V

(11)Switch S open V_O=4V, closed V_O= 1.75V