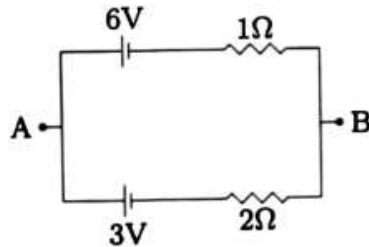
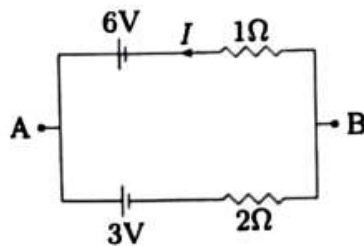


## Q 09

Two batteries of different *emfs* and different internal resistances are connected as shown. The voltage across *AB* (in volts) is ..... (2011)



Sol. Let  $I$  be the current in the loop.



Kirchhoff's loop law,  $6 - 3 - 2I - 1I = 0$ , gives  $I = 1$  A. Now, going from  $B$  to  $A$  along the upper branch, we get,  $V_B - 1 + 6 = V_A$ , which gives  $V_A - V_B = 5$  V.

Ans. 5  $\square$