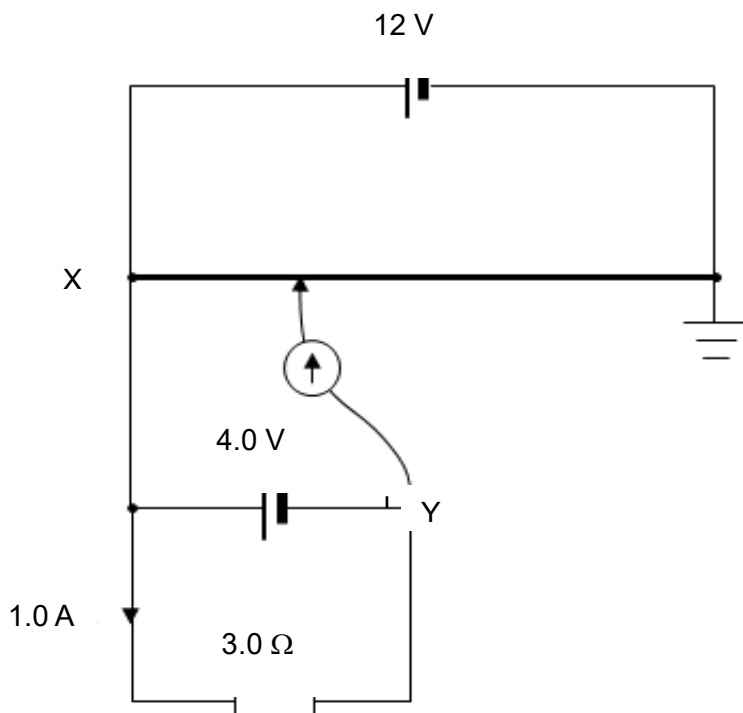


- 20** A 12 V cell with negligible internal resistance is connected to a resistance wire which is earthed at one end. Another cell of e.m.f. 4.0 V drives a current of 1.0 A through a  $3.0\ \Omega$  resistor. The galvanometer is at zero deflection.



What are the potentials at X and Y?

|          | potential at X / V | potential at Y / V |
|----------|--------------------|--------------------|
| <b>A</b> | 0                  | −4                 |
| <b>B</b> | 12                 | 8                  |
| <b>C</b> | 3                  | 0                  |
| <b>D</b> | 12                 | 9                  |