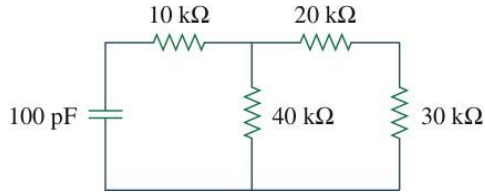
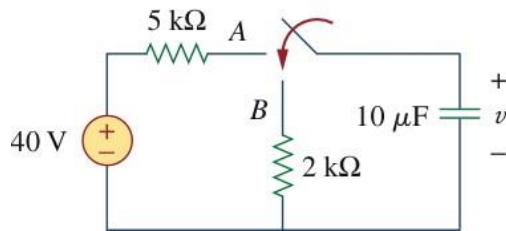


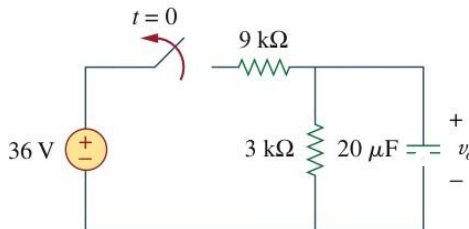
**P1:** Determine the time constant for the circuit below. Hint: between 3 and 4  $\mu\text{s}$ .



**P2:** The switch below moves instantaneously from A to B at  $t = 0$ . Find  $v$  for  $t > 0$ . Note: In all schematics, the position of the switch does not matter: what matters is the direction of the arrow. The switch moves in the direction of the arrow at  $t=0$ , so for  $t < 0$  it is in the opposite direction of the arrow (i.e. connected to A), and for  $t > 0$  it is moved in the direction of the arrow (i.e. connected to B). Hint: all integers in solution and multiples of 10.



**P3:** Given the following. Note the direction of the arrow; the switch is in the opposite arrow direction for  $t < 0$  (ie closed) and moved in the direction of the arrow for  $t > 0$  (ie open). Hint: part b) between 50 and 75 ms.



a) Find  $v(t)$  for  $t > 0$ .

b) Find when  $v(t) = 1/3 v(t=0)$ . That is, how long does it take for the capacitor's voltage to drop to 1/3 of its initial voltage?