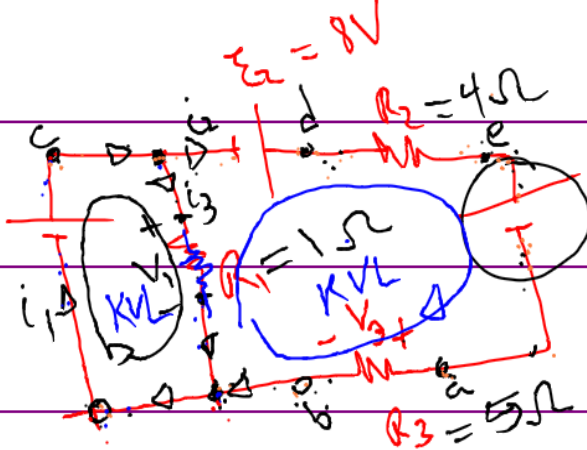


$R_1 = V$   
 $i_1 = 10$

$10V = e_1$



$8 - i_2 * 4 - 6 - V_3 + 10 = 0$

$e_3 = 6V$   
 $V_3 + 4i_2 = 12$

$V_3 = ?$

$10 - i_3 R_1 = 0$

$i_3 = 10A$   
 $V_1 = 10V$

$V_3 = i_2 * R_3$

$V_{ae} = V_a - V_e = 6 \text{ volt}$

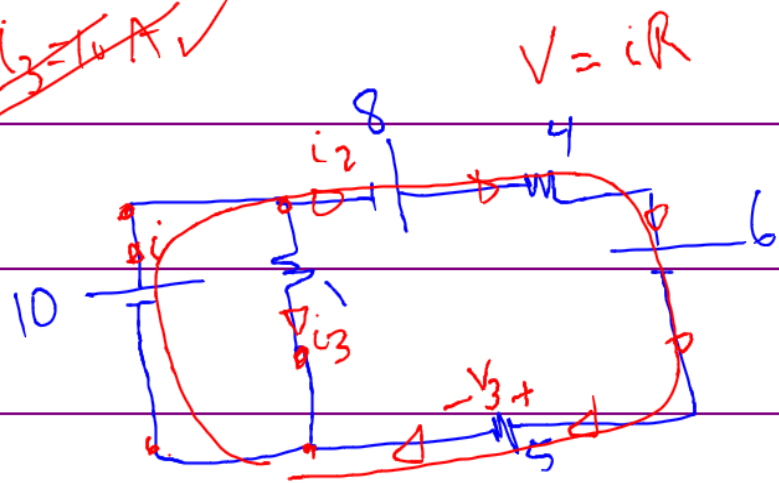
KCL, KVL

$n$   
KCL  $n-1$   
loop

$i_1 - i_2 - i_3 = 0$  ✓

$i_1 = i_2 + i_3$  ✓

~~$i_3 = 10A$~~  ✓



$V_3 = ?$

$10 + 8 - i_2 * 4 - 6 - i_2 * 5 = 0$

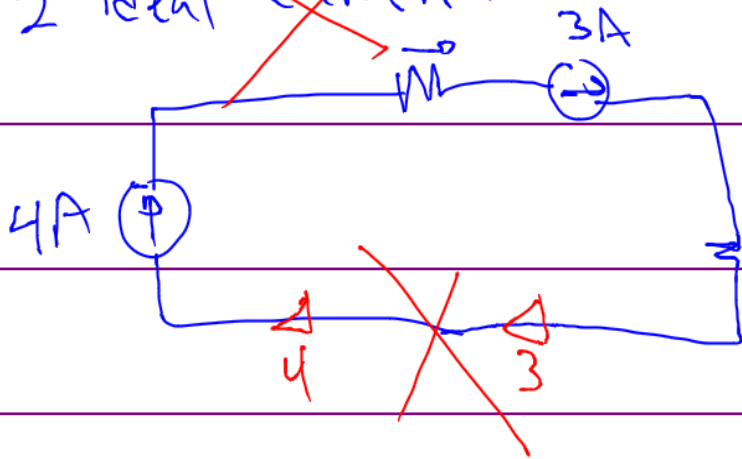
$12 = 9i_2$

$V_3 = i_2 R_3$

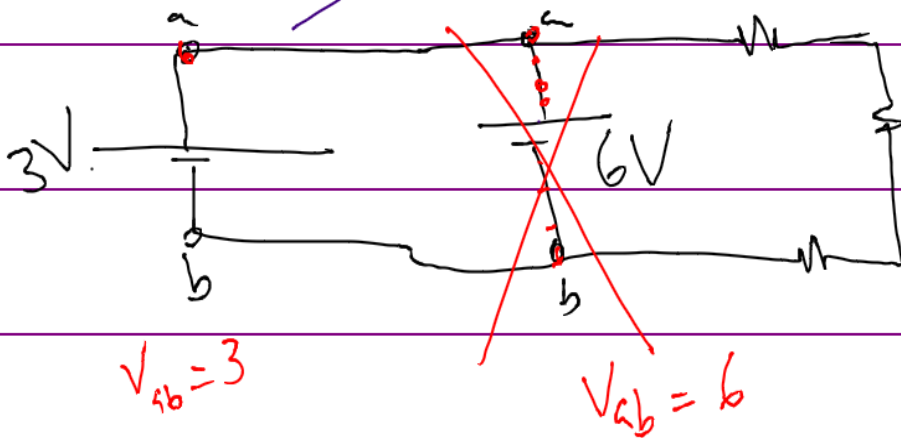
$i_2 = \frac{12}{9} = \frac{4}{3}$

$= \frac{4}{3} * 5 = \frac{20}{3} \approx 6.67V$

or more  
~~2 ideal current sources in series~~

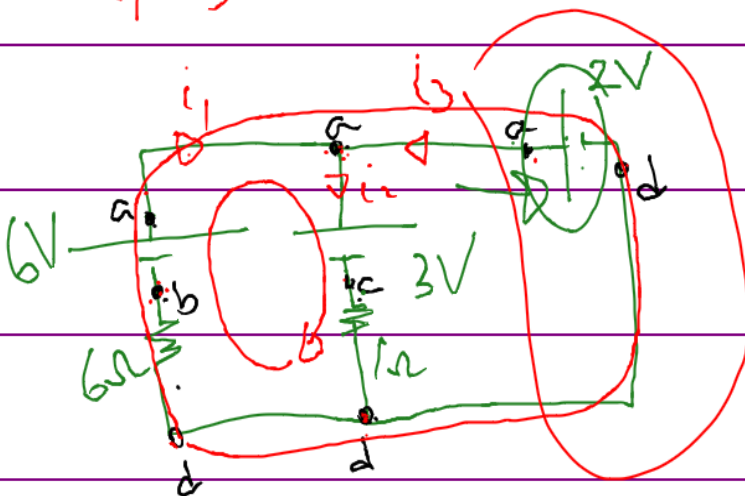


~~2 ideal voltage sources in parallel~~



~~$3 = 6$~~

$$i_1 + i_3 = i_2 \Rightarrow i_3 = i_2 - i_1 = -5 - 4/6$$



$i_3 < 0$

$i_3 = -5.67$

charging

$$2 = -3 - i_2$$

$$V_{ad} = V_a - V_d = 2 \text{ Volt} =$$

$$\sqrt{i_2 = -5A}$$

$$V_{ad} = -3 - i_2 + 1$$

$$-6i_1 + 6 - 2 = 0 \Rightarrow i_1 = 4/6 = 0.67$$

