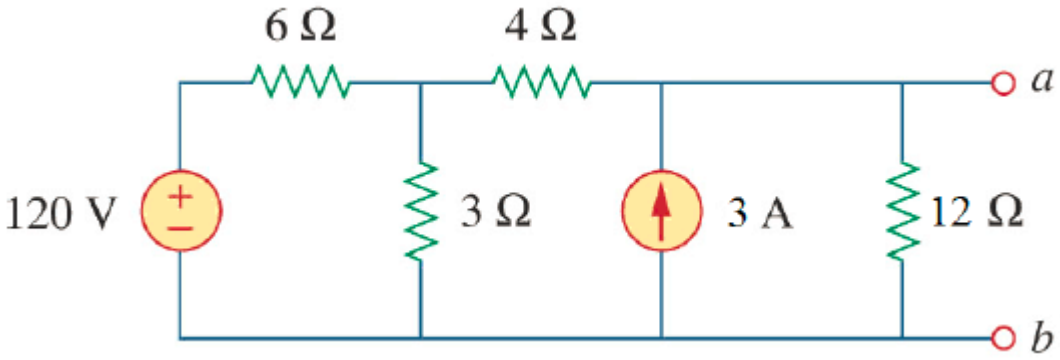
Answer

Step 1

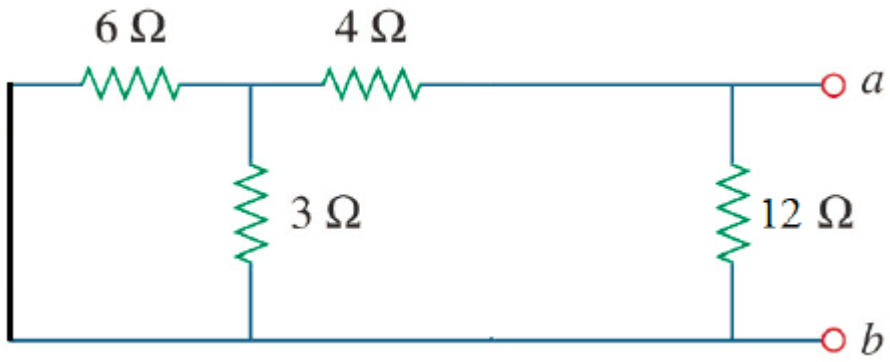
The given circuit is:

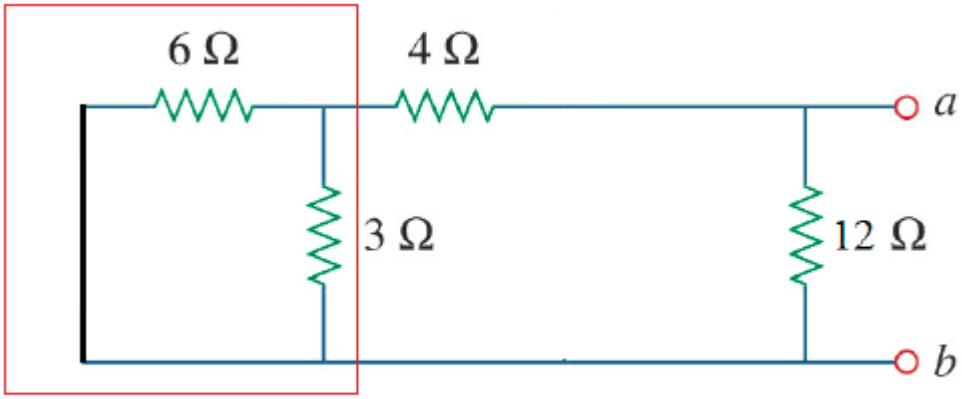


Step 2

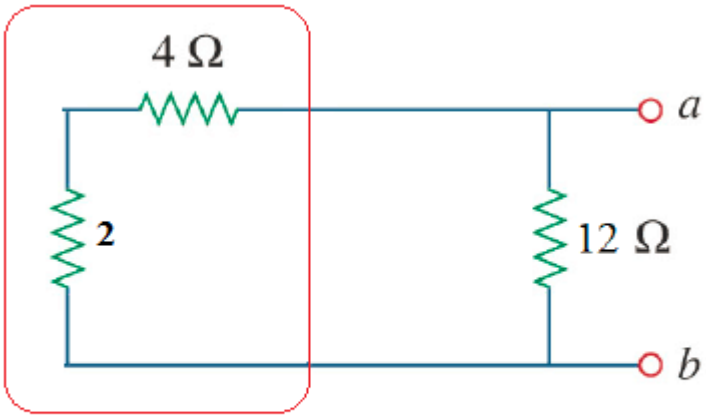
Find Thevenin's equivalent resitance across A and B.

Open circuited the current source and short-circuited the voltage source,

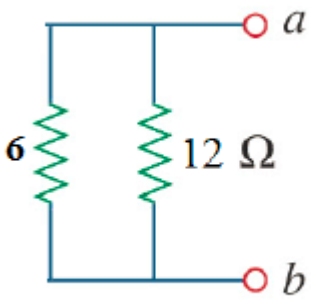




Parallel,
$6\|3 = 2$



Series,
2+4 =6

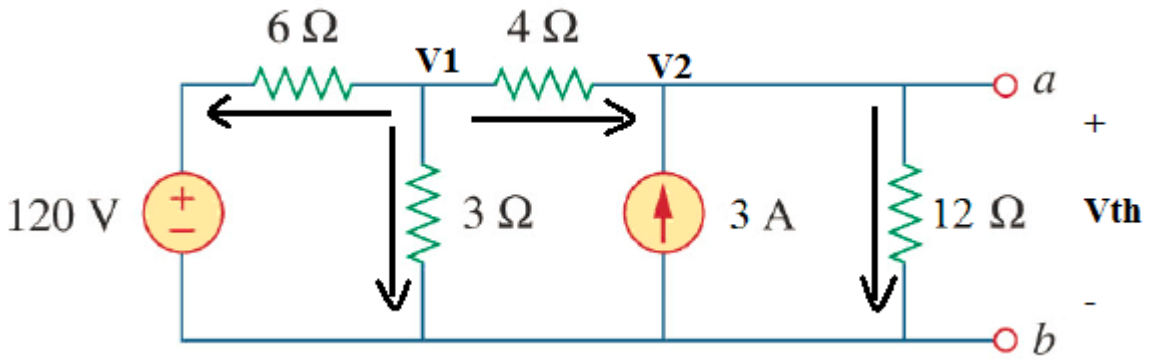


Hence,

$R_{th} = 6||12 R_{th} = 4\Omega$

Step 3

Now find the Thevenin's voltage,



Apply KCL at node V_1,

$$\frac{V_1-120}{6}+\frac{V_1-V_2}{4}+\frac{V_1}{3}=00.75V_1-0.25V_2=120---\left(1\right)$$

Apply KCL at node V_2,

$$\frac{V_1-V_2}{4}+3=\frac{V_2}{12}0.25V_1-0.333V_2=-3---\left(2\right)$$

Solve (1) and (2),

$$V_1=217.41VV_2=172.23V$$

And,

$$V_{th}=V_2=172.23V$$

Step 4

The Thevenin's equivalent circuit is: