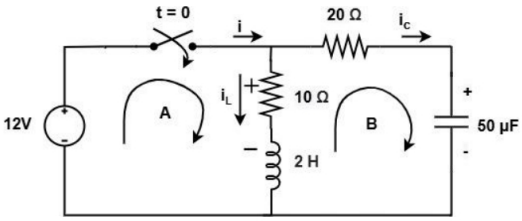
Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 80%. We keep your highest score.

Next item

1. The steady state inductor current i_L in the circuit is _____A

1 / 1 point

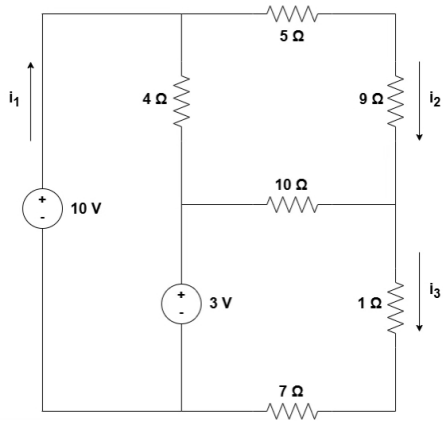


- (●) 1.2 A
- ( ) 2.4 A
- ( ) -1.4 A
- ( ) -1.2 A

Correct
Apply equivalent circuit of inductor and capacitor at steady state

2. Find the current I_1, I_2 and I_3 for the circuit given below

1 / 1 point

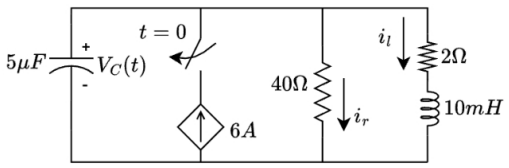


- ( ) I_1 = 0.43A, I_2 = 0.47A and I_3 = 2.22A
- ( ) I_1 = 2.22A, I_2 = 0.43A and I_3 = 0.47A
- ( ) I_1 = 0.47A, I_2 = 0.43A and I_3 = 2.22A
- (●) I_1 = 2.22A, I_2 = 0.47A and I_3 = 0.43A

Correct
Apply the KVL in all the loops to calculate the currents I_1, I_2 and I_3

3. In the given circuit, the switch has been kept in the ON position for a long time. It is turned OFF at time t = 0s. Find the value of the current i_r flowing through the resistor and the voltage V_c across the capacitor at time t = 0^+.

1 / 1 point

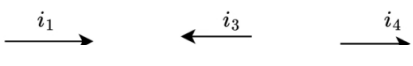


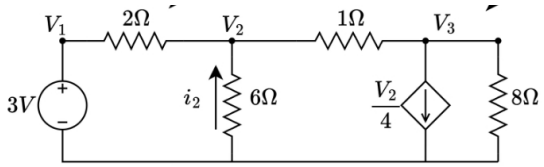
- ( ) i_r = 0.5788 A V_c=22.8488 V
- (●) i_r = 0.2857 A V_c=11.4286 V
- ( ) i_r = 0.1429 A V_c=5.7222 V
- ( ) i_r = 0.1429 A V_c=22.8472 V

Correct
Find the capacitor voltage and current with current division rule

4. For the circuit given below, find the voltages V_1, V_2 and V_3

1 / 1 point

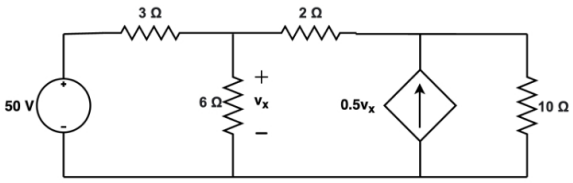




- $V_1 = 1.5V, V_2 = -1.5V$ and $V_3 = 3V$
- $V_1 = 1V, V_2 = 1V$ and $V_3 = 1V$
- $V_1 = 3V, V_2 = 1.5V$ and $V_3 = 1V$
- $V_1 = 3V, V_2 = 1V$ and $V_3 = 1.5V$

Correct
Apply KCL at nodes 2 and 3 and solve the equations for the values of V_1, V_2 and V_3

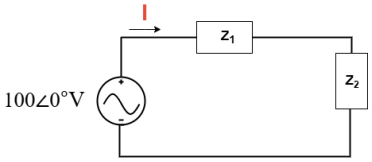
5. The voltage V_x in the circuit is _____V — 1 / 1 point



- 105V
- 95V
- 110V
- 100V

Correct
Use source transforms. Then apply KVL in the two remaining meshes.

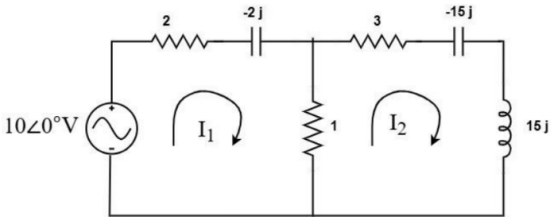
6. In the circuit shown below, Z1 consists of a resistor of 20 ohms and an inductor of 0.15 mH in series, while Z2 consists of a resistor of 20 ohms and a capacitor of 50 microF in series. Find the current I flowing through the circuit for w= 10^(5) rad/s — 1 / 1 point



- 2.425 ∠ - 14.04° A
- 2.345 ∠ -20.304° A
- -2.425 ∠ 14.04° A
- -2.345 ∠ -20.304° A

Correct
Find equivalent impedance and then the current

7. Determine the current through I_1 and I_2 in the given circuit in polar form. — 1 / 1 point

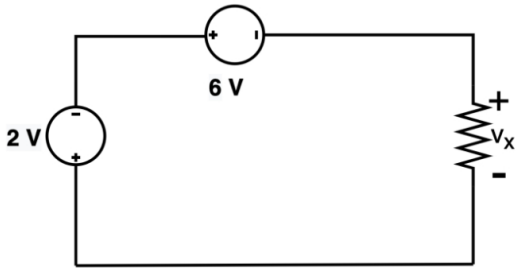


- I_1= 0.735 ∠ 126° A and I_2= 2.94 ∠ 126° A
- I_1= 0.735 ∠ 36° A and I_2= 2.94 ∠ 36° A
- I_1= 2.94 ∠ 36° A and I_2= 0.735 ∠ 36° A
- I_1= 2.94 ∠ 126° A and I_2= 0.735 ∠ 126° A

Correct
Use Nodal analysis.

8. The value of V_x in the circuit is _____V

1 / 1 point

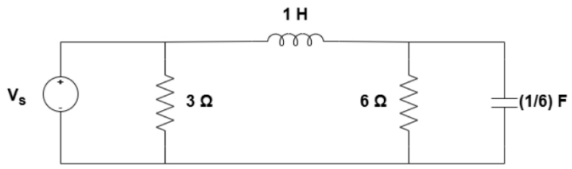


- (•) -8V
- ( ) +8V
- ( ) -4V
- ( ) +4V

Correct
Apply KVL in the loop to find V_x

9. Find the current flowing in the 6 Ω resistance in complex form if $V_s = 10\ Cos(3t)$ V

1 / 1 point

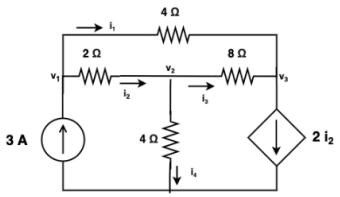


- (•) -5/3 -j 5/3
- ( ) -5/3 +j 5/3
- ( ) 5/3 -j 5/3
- ( ) 5/3 +j 5/3

Correct
Find net impedance and then apply current division rule.

10. Find the node voltages V_1, V_2, V_3 in the circuit shown below

1 / 1 point

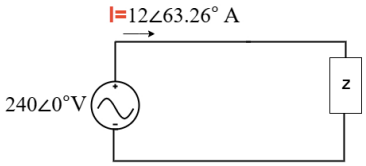


- (•) V_1= 4.8 V, V_2= 2.4 V, V_3= -2.4 V
- ( ) V_1= 4.8 V, V_2= -2.4 V, V_3= -2.4 V
- ( ) V_1= 2.4 V, V_2= 4.8 V, V_3= -2.4 V
- ( ) V_1= 2.4 V, V_2= 2.4 V, V_3= -4.8 V

Correct
Apply Nodal analysis and KCL to solve

11. In the circuit shown below, Z consists of a resistor R and a capacitor C connected in series. Find the value of R and C if w= 10^(4) rad/s.

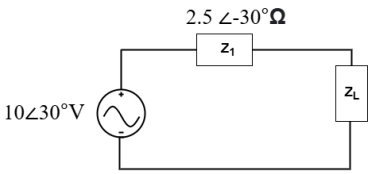
1 / 1 point



- (•) R=9 Ohms and C= 5.6 microFarad
- ( ) R=5.6 Ohms and C= 9 microFarad
- ( ) R=18 Ohms and C= 11.2 microFarad
- ( ) R=9 Ohms and C= 17.86 microFarad

Correct
Find Z and calculate R and C

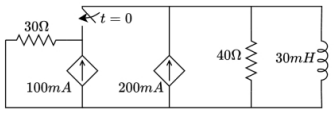
12. Find the voltage V_L across the impedance Z_L when maximum power is transferred. 1 / 1 point



- -5.77 ∠ -60° V
- -5.77 ∠ 60° V
- 5.77 ∠ 60° V
- 5.77 ∠ -60° V

Correct
Find Z_L and apply voltage division rule to determine the voltage

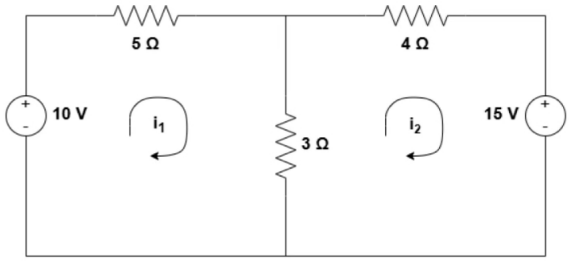
13. In the given circuit, the switch is closed at t = 0s. The instantaneous power dissipated by the 40Ω resistor at time t = 1.414ms is _____mW. 1 / 1 point



- -14.59767 mW
- 28.59767 mW
- -28.59767 mW
- 14.59767 mW

Correct
find time constant and current equation and calculate power with i^(2)R

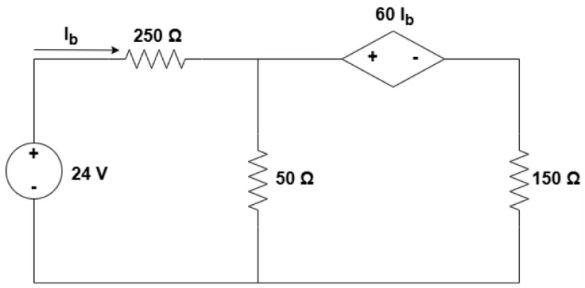
14. Find the value of currents I_1 and I_2 flowing clockwise in the direction in the first and second mesh, respectively 1 / 1 point



- I_1 = -0.53A, I_2 = 1.91A
- I_1 = 0.53A, I_2 = -1.91A
- I_1 = 0.53A, I_2 = 1.91A
- I_1 = -0.53A, I_2 = -1.91A

Correct
Apply KVL in both the loops and solve the equations for the currents I_1 and I_2

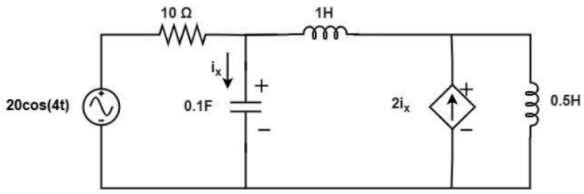
15. The current I_b flowing in the circuit below is _____mA. 1 / 1 point



- 0.309mA
- 0.617mA
- 158.68mA
- 79.34mA

Correct
Apply KCL at node V_x and calculate V_x

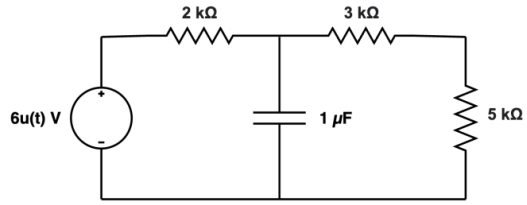
16. Find i_x in the following circuit using nodal analysis. 1 / 1 point



- -7.59∠18.4° A
- -7.59∠108.4° A
- 7.59∠18.4° A
- 7.59∠108.4° A

Correct
Apply nodal analysis

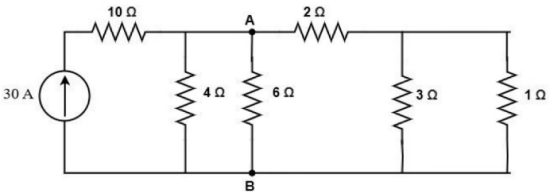
17. Assume the capacitor is discharged and connected in the circuit below. What is the final steady state voltage of the capacitor and voltage of the capacitor at t=1ms? 1 / 1 point



- Final V_c= 4.8 V, V_c(t=1ms)=0.560 V
- Final V_c= 6 V, V_c(t=1ms)=0.560 V
- Final V_c= 4.8 V, V_c(t=1ms)=2.23 V
- Final V_c= 6 V, V_c(t=1ms)=2.23 V

Correct
Find the capacitor voltage equation by calculating initial voltage and final voltage

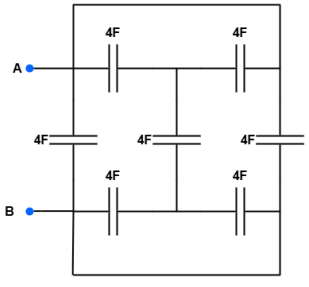
18. Determine the current through 6 Ohm resistor connected across A and B in the given circuit using Norton's theorem 1 / 1 point



- 3.304A
- 12.818A
- 1.223A
- 6.409A

Correct
Apply the rules of finding Norton's equivalent and solve the equations

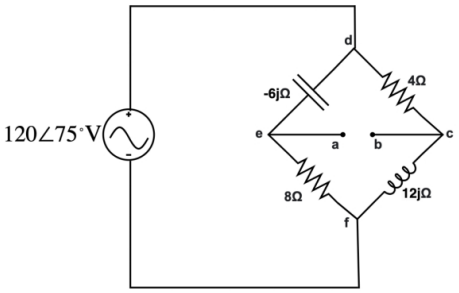
19. The equivalent capacitance across A and B of the circuit given below is _____ F 1 / 1 point



- ○ 5F
- ○ 20F
- ◉ 10F
- ○ 30F

✓ **Correct**
Use series and parallel equivalent capacitance equation

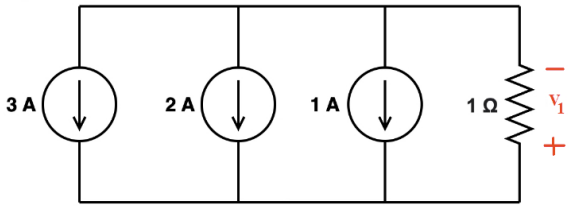
20. Find the Thevenin equivalent voltage across the terminals a and b **1 / 1 point**



- ○ V_{th}= -37.95 ∠ 130.31° V
- ◉ V_{th}= 37.95 ∠ 220.31° V
- ○ V_{th}= -37.95 ∠ 220.31° V
- ○ V_{th}= 37.95 ∠ 130.31° V

✓ **Correct**
Apply thevenin theorem

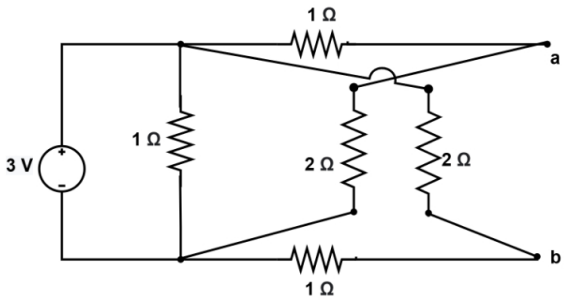
21. The voltage developed across the 1 ohm resistor, $\mathbf{V_1}$ with polarity as shown in figure below is _____V **1 / 1 point**



- ○ 1V
- ◉ 6V
- ○ 3V
- ○ 2V

✓ **Correct**
Find the algebraic sum of the currents and then use Ohm's law

22. Find the norton equivalent circuit parameters seen from terminal a-b in the circuit below **1 / 1 point**

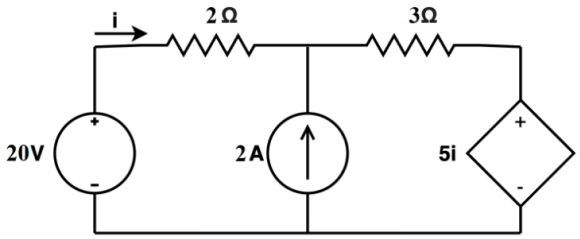


- ○ R_N= 4/3 Ohm and I_N=1 A
- ○ R_N= 1 Ohm and I_N=3/4 A
- ○ R_N= 3/4 Ohm and I_N=4/3 A
- ◉ R_N= 4/3 Ohm and I_N=3/4 A

✓ **Correct**
Apply Nortons Theorem

23. The value of the current i in the circuit below is _____ A

1 / 1 point

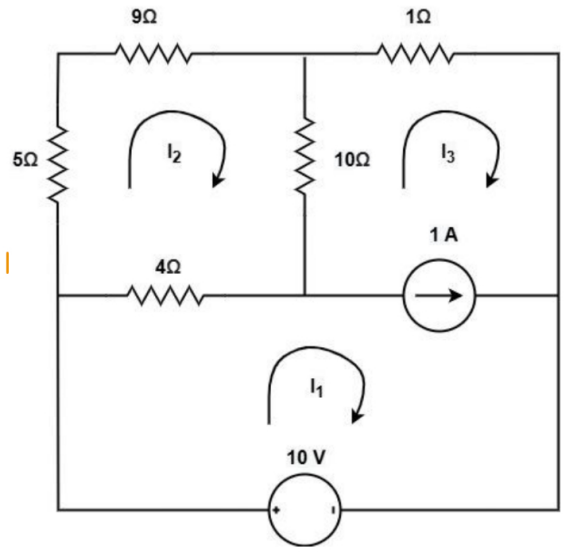


- (●) -1.4A
- ( ) 1.4A
- ( ) -2.8A
- ( ) 2.8A

Correct
Apply KCL at the node between the resistors and solve for i.

24. Find the currents I_1, I_2 and I_3, respectively

1 / 1 point

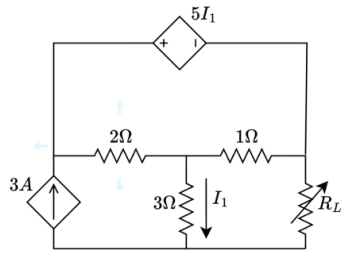


- (●) $I_1 = 2A, I_2 = 0.64A$ and $I_3 = 1A$
- ( ) $I_1 = 3A, I_2 = 0.5A$ and $I_3 = 4A$
- ( ) $I_1 = 1A, I_2 = 0.66A$ and $I_3 = 3A$
- ( ) $I_1 = 1A, I_2 = 0.63A$ and $I_3 = 2A$

Correct
Use nodal analysis and KVL/KCL to find the currents

25. In the circuit below , the maximum power that the resistor R_L can absorb using Thevenin analysis is _____W.

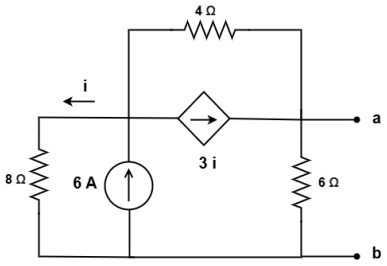
1 / 1 point



- (●) 4.5 W
- ( ) 9 W
- ( ) 13.5 W
- ( ) 18 W

Correct
Open the circuit at R_L and apply KCL to the leftmost and middle nodes to find V_{TH}. For R_{TH}, Open the current source and apply a test voltage in place of RL. $P_{max} = (V_{TH})^2 / (4R_{TH})$

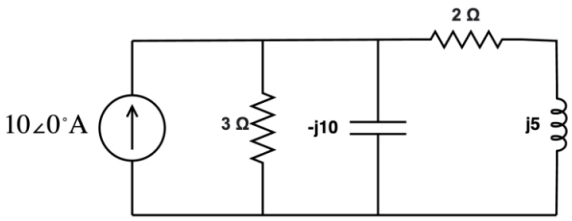
26. The Thevenin equivalent between a and b for the given circuit given below is 1 / 1 point



- V_{th} = 20V, R_{th} = 7.2Ω
- V_{th} = 14V, R_{th} = 3.6Ω
- V_{th} = 16V, R_{th} = 5.6Ω
- V_{th} = 24V, R_{th} = 4.8Ω

Correct
Apply the rules of finding Thevenin's equivalent and solve the equations

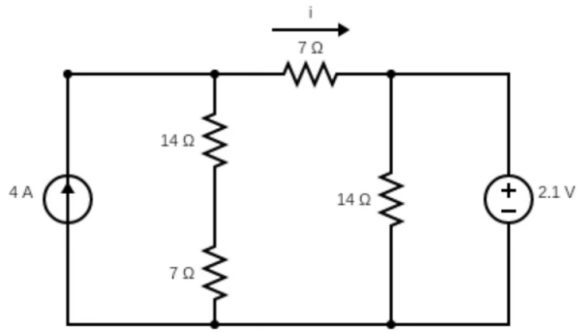
27. The real power output of the source in the circuit shown is _____W 1 / 1 point



- 120 W
- 240 W
- 60 W
- 480 W

Correct
Find voltage and calculate power with VIcos(phi)

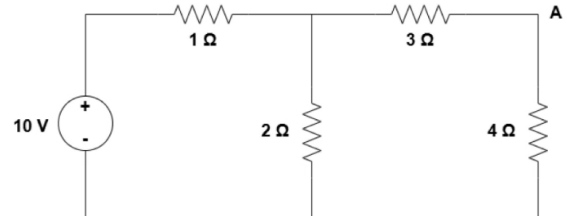
28. Determine the current i in the circuit 1 / 1 point



- +0.075A
- -0.075A
- 2.925A
- 3.00A

Correct
Use superposition principle to find the current

29. Calculate the Thevenin's resistance and Thevenin's voltage across the terminal A and B 1 / 1 point

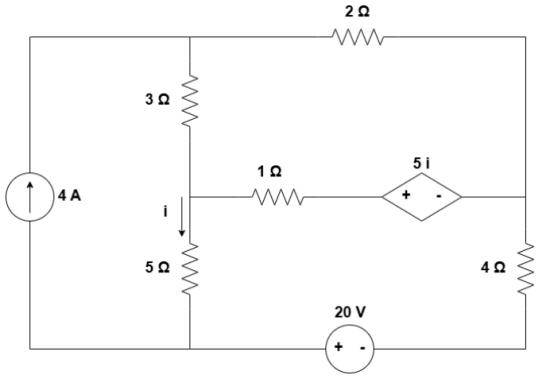


- (●) $R_{th} = 3.67\Omega, V_{th} = 6.67V$
- ( ) $R_{th} = 3.67\Omega, V_{th} = 3.34V$
- ( ) $R_{th} = 2.2\Omega, V_{th} = 6.67V$
- ( ) $R_{th} = 2.2\Omega, V_{th} = 3.34V$

Correct
Find the effective resistance and voltage across 2Ω

30. Find the current i flowing through 5 ohm resistor in the circuit shown below

1 / 1 point



- ( ) 0.47 A
- (●) -0.47 A
- ( ) -0.94 A
- ( ) 0.94 A

Correct
Use source transformation and apply superposition theorem