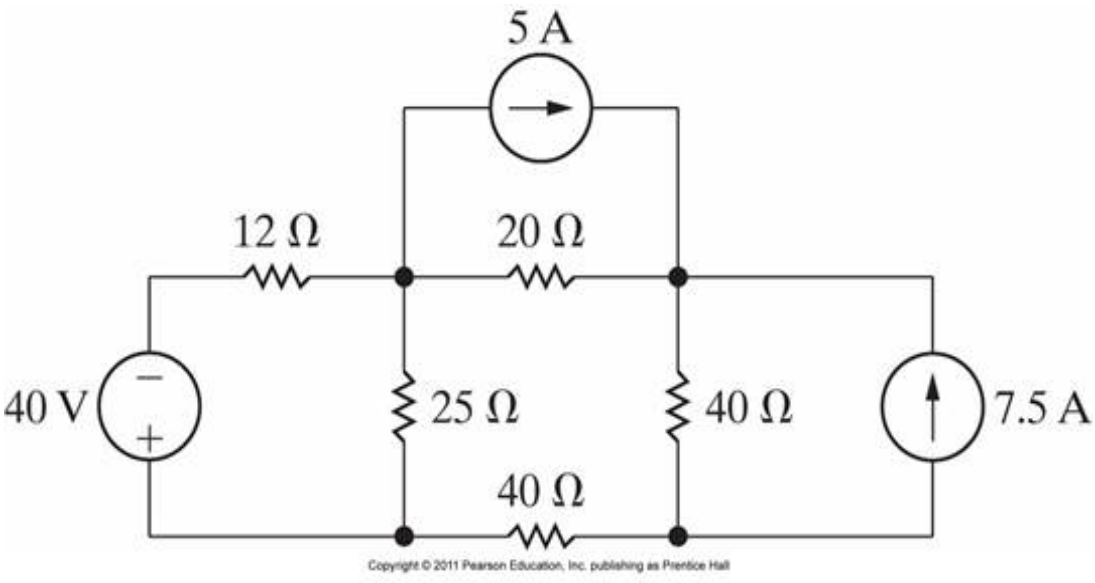
Started on	Wednesday, 2 November 2016, 11:55 AM
State	Finished
Completed on	Wednesday, 2 November 2016, 12:55 PM
Time taken	59 mins 42 secs
Grade	**82.50** out of 100.00

Question 1

Partially correct

Mark 7.50 out of 15.00



Q1d

a) Find the voltage across the 7.5A current source.

$V_{7.5A}$ = -122 ✗ Volts

b) Find the voltage across the 25 Ω (Ohm) resistor.

$V_{25\Omega}$ = -10 ✓ Volts

Numeric Answer

$V_{7.5A}$ = 216V

$V_{25\Omega}$ = -10V

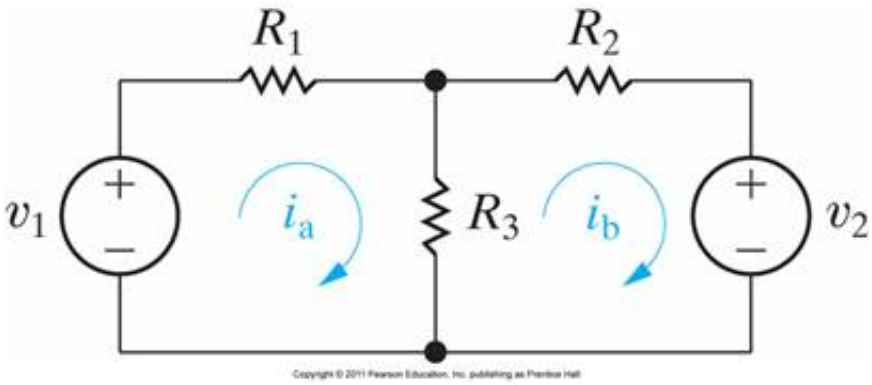
Partially correct

Marks for this submission: 7.50/15.00.

Question 2

Correct

Mark 15.00 out of 15.00



Q2j

Given:

v_1 = 21 Volts v_2 = 28 Volts

R_1 = 10 Ω (Ohms) R_2 = 40 Ω (Ohms) R_3 = 80 Ω (Ohms)

Find the currents i_a and i_b.

i_a = 63.6 mA (milli Amp)

i_b = -190.9 mA (milli Amp)

Numeric Answer

i_a = 63.636 mA

i_b = -190.909 mA

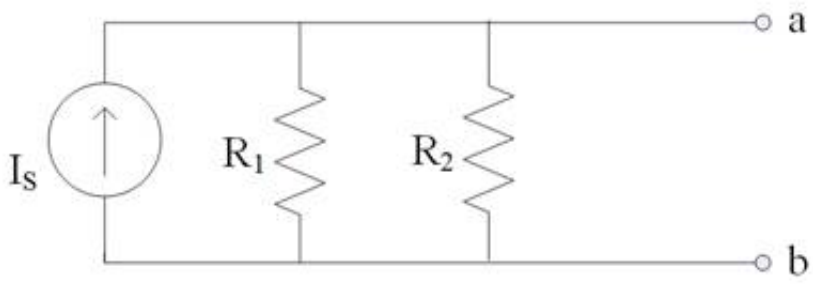
Correct

Marks for this submission: 15.00/15.00.

Question 3

Correct

Mark 10.00 out of 10.00



Q3f

Given: I_s = 10 A R_1 = 10 Ω (Ohms) R_2 = 40 Ω (Ohms)

Perform a source transformation and find the voltage transform equivalent.

this circuit.

$V_{transform}$ = 80 ✓ V

$R_{transform}$ = 8 ✓ Ω (Ohm)

Numeric Answer

$V_{transform}$ = 80 V

$R_{transform}$ = 8 Ω (Ohm)

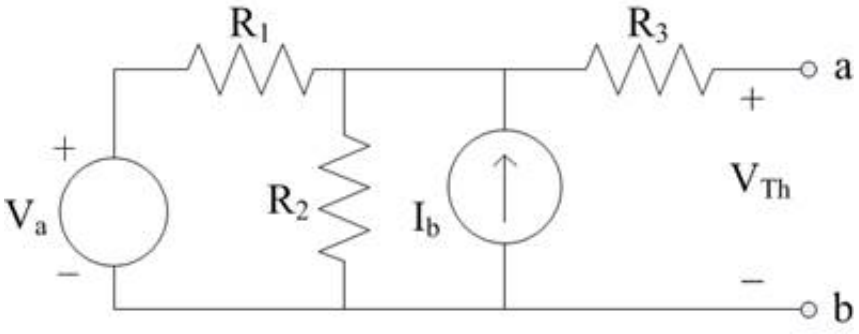
Correct

Marks for this submission: 10.00/10.00.

Question 4

Correct

Mark 15.00 out of 15.00



Q4b

Given:

V_a = 10 Volts I_b = 3 Amps

R_1 = 20 Ω (Ohm) R_2 = 20 Ω (Ohm) R_3 = 10 Ω (Ohm)

a) Find the Thévenin equivalent voltage V_{Th}.

V_{Th} = 35 ✓ Volts

b) Find the Thévenin equivalent resistance R_{Th}.

R_{Th} = 20 ✓ Ω (Ohms)

Numeric Answer

a) V_{Th} = 35.0 Volts

b) R_{Th} = 20.0 Ω (Ohms)

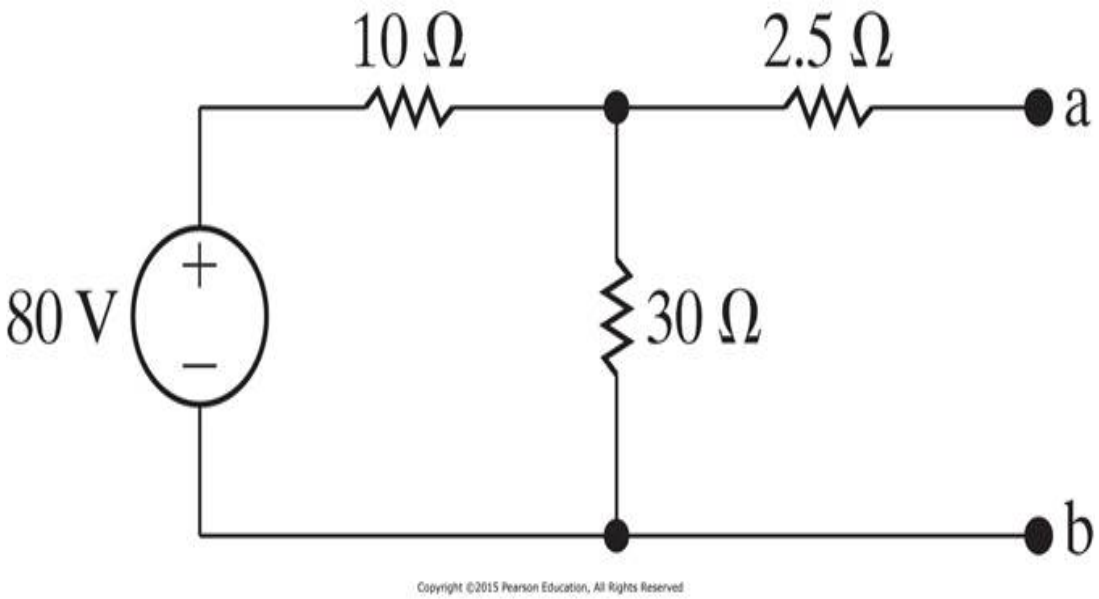
Correct

Marks for this submission: 15.00/15.00.

Question 5

Correct

Mark 15.00 out of 15.00



Q5b

Find the Norton equivalent circuit with respect to terminals ab.

I_N = 6 ✓ A

R_{Th} = 10 ✓ Ω (Ohm)

Numeric Answer

I_N = = 6 A

R_{Th} = 10 Ω (Ohm)

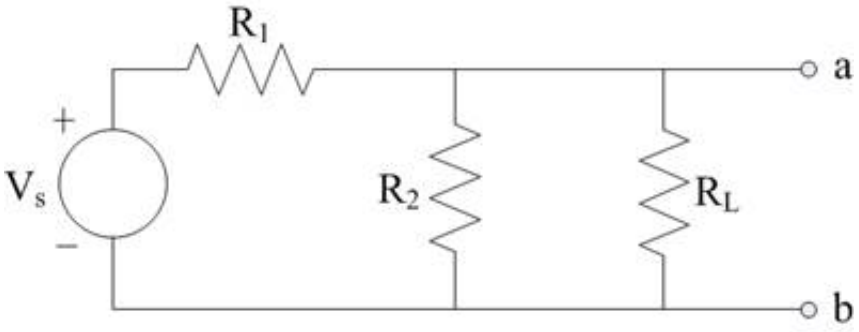
Correct

Marks for this submission: 15.00/15.00.

Question 6

Correct

Mark 10.00 out of 10.00



Q6j

Given:

V_s = 40 Volts R_1 = 140 Ω (Ohm) R_2 = 84 Ω (Ohm)

a) Find the value of R_L that results in maximum power being transferred to R_L.

$R_{L,max\ power}$ = 52.5 ✓ Ω (Ohms)

b) Find the maximum power that can be delivered to R_L.

$P_{RL,max\ power}$ = 1.07 ✓ Watts

Numeric Answer

a) $R_{L,max\ power}$ = 52.50 Ω (Ohms)

b) $P_{RL,max\ power}$ = 1.071 Watts

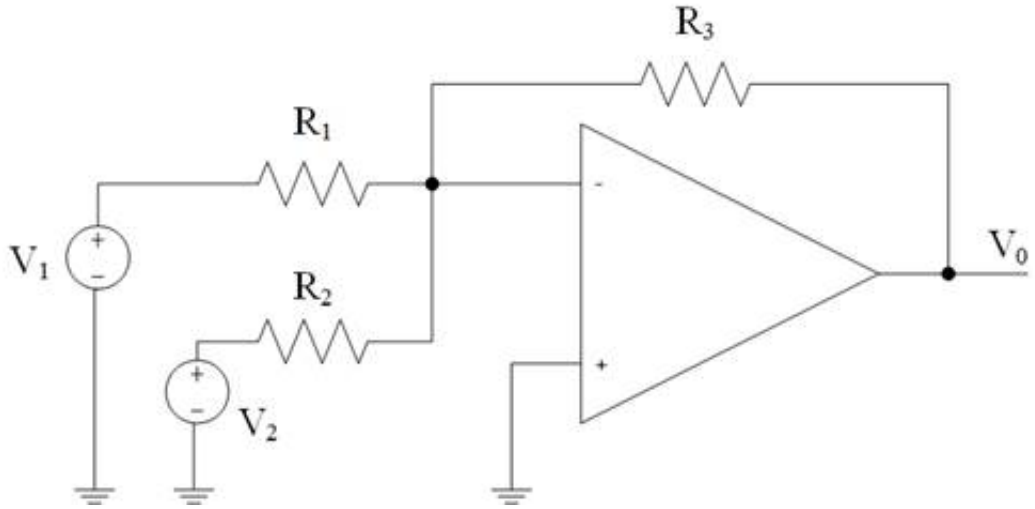
Correct

Marks for this submission: 10.00/10.00.

Question 7

Not answered

Mark 0.00 out of 5.00



Q7j

Assume that the operational amplifier is ideal.

The opamp has two power inputs (not shown) of $+V_{cc}$ = +15V and $-V_{cc}$ = -15V.

Given: V_1 = 10 Volts V_2 = 10 Volts

R_1 = 2 kΩ (kilo Ohm) R_2 = 3 kΩ (kilo Ohm) R_3 = 1.5 kΩ (kilo Ohm)

Determine the voltage v_{out}.

v_{out} = ✗ Volts

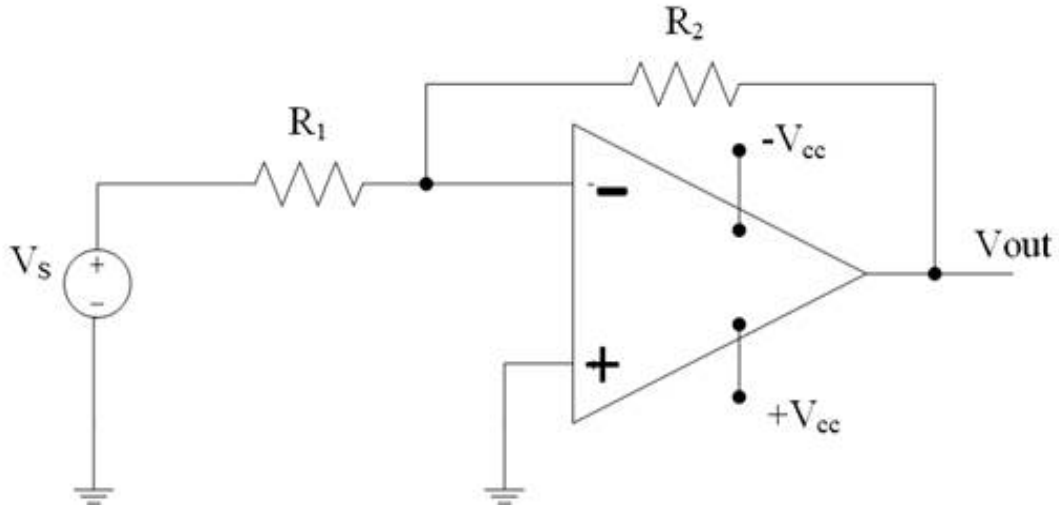
Numeric Answer

v_{out} = -12.5 Volts

Question 8

Incorrect

Mark 0.00 out of 5.00



Q8c

Assume that the operational amplifier is ideal.

The opamp has two power inputs $+V_{cc}$ = +15V and $-V_{cc}$ = -15V.

Given: V_S = -3.0 Volts R_1 = 47 kΩ (kilo Ohm) R_2 = 270 kΩ (kilo Ohm)

Determine the voltage V_{out}.

V_{out} = -17.23 ✗ Volts

Numeric Answer

v_{out} = 15.0 Volts

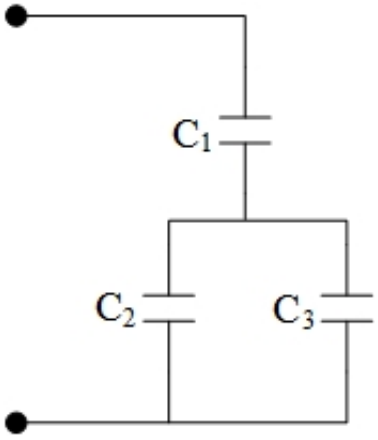
Incorrect

Marks for this submission: 0.00/5.00.

Question 9

Correct

Mark 5.00 out of 5.00



Q9e

Given:

C_1 = 10 μF (micro F) C_2 = 6 μF (micro F) C_3 = 4 μF (micro F)

Find the equivalent capacitance C_{Eq}.

C_{Eq} = 5 ✓ μF (micro F)

Numeric Answer

C_{Eq} = 5.0 μF (micro F)

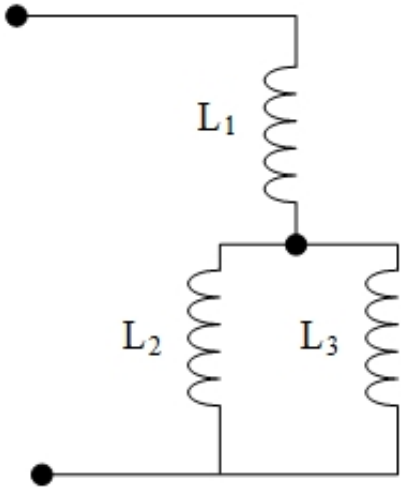
Correct

Marks for this submission: 5.00/5.00.

Question 10

Correct

Mark 5.00 out of 5.00



Q10h

Given:

L_1 = 1 mH (milli H) L_2 = 4 mH (milli H) L_3 = 7 mH (milli H)

Find the equivalent inductance L_{Eq}.

L_{Eq} = 3.55 } mH (milli H)

Numeric Answer

L_{Eq} = 3.5455 mH

Correct

Marks for this submission: 5.00/5.00.