

Started on Monday, 19 September 2016, 12:02 PM

State Finished

Completed on Wednesday, 21 September 2016, 11:33 AM

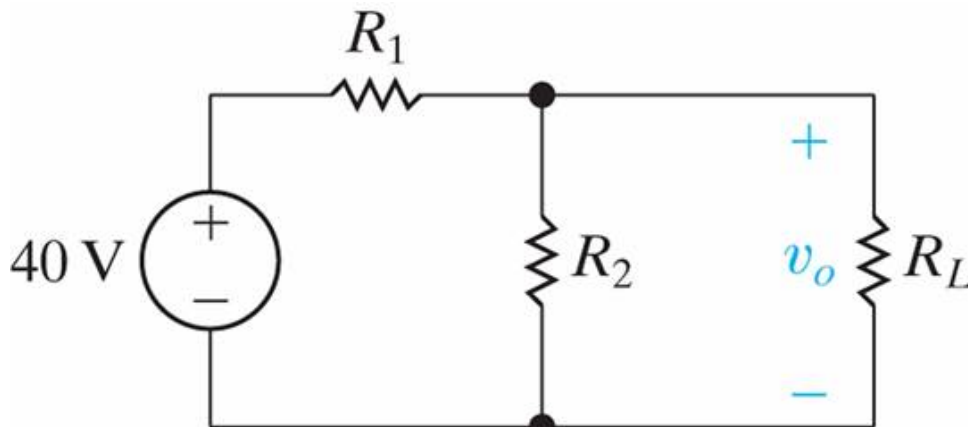
Time taken 1 day 23 hours

Grade 100.00 out of 100.00

Question 1

Correct

Mark 10.00 out of 10.00



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P3.16_9ed

The no-load voltage across R_2 in the voltage-divider circuit shown is 8 V. The smallest load resistor that is ever connected to the divider is 3.6 k Ω (kilo Ohm). When the divider is loaded, v_o is not to drop below 7.5V.

a) Design the divider circuit to meet the specifications just mentioned. Specify the numerical values of R_1 and R_2 when you use a single standard value for each resistor from the textbook's Appendix H. You may use up to two resistors in combination for R_1 and up to another two resistors in combination for R_2 .

$R_1 =$ \checkmark Ω (Ohms) $R_2 =$ \checkmark Ω (Ohms)

b) Assume the power ratings of commercially available resistors are 1/16, 1/8, 1/4, 1, and 2 W. What power rating would you specify?

$P_{R1, \text{rating}} =$ \checkmark Watt $P_{R2, \text{rating}} =$ \checkmark Watt

Numeric Answer

(a) $R_1 = 1,200 \Omega$ $R_2 = 303 \Omega$

(b) $P_{R1, \text{rating}} = 1 \text{ Watt}$ $P_{R2, \text{rating}} = 0.25\text{W} = \frac{1}{4} \text{ Watt}$

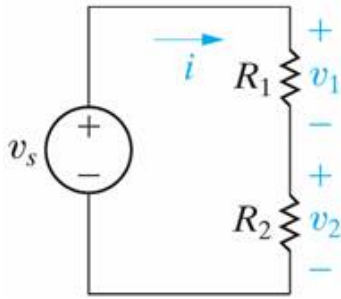
Correct

Marks for this submission: 10.00/10.00.

Question 2

Correct

Mark 10.00 out of 10.00



CQ3.05c

Given:

 $v_s = 51 \text{ Volts}$ $R_1 = 177 \, \Omega \text{ (Ohms)}$ $R_2 = 817 \, \Omega \text{ (Ohms)}$ Find the current i . $i = ?? \text{ mA (milli A)}$

Answer: 51.3



Calculated question

The correct answer is: 51.31

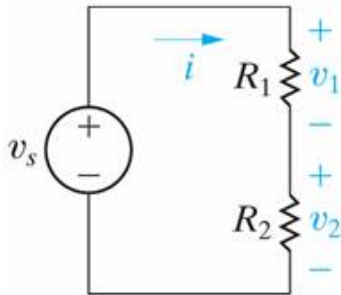
Correct

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Question 3

Correct

Mark 10.00 out of 10.00



CQ3.05b

Given:

 $v_s = 95 \text{ Volts}$ $R_1 = 835 \, \Omega \text{ (Ohms)}$ $R_2 = 542 \, \Omega \text{ (Ohms)}$ Find the voltage v_2 .

Answer: 37.4



Calculated question

The correct answer is: 37.39

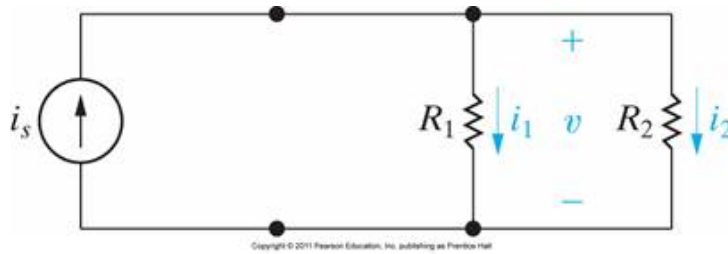
Correct

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Question 4

Correct

Mark 10.00 out of 10.00



CQ3.06c

Given:

$$i_s = 88 \text{ Amps} \quad R_1 = 217 \, \Omega \text{ (Ohms)} \quad R_2 = 986 \, \Omega \text{ (Ohms)}$$

Find the voltage v .Answer: 

Calculated question

The correct answer is: 15651.42

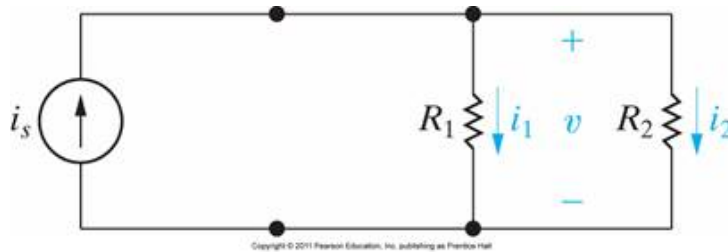
Correct

Marks for this submission: 10.00/10.00.

Question 5

Correct

Mark 10.00 out of 10.00



CQ3.06a

Given:

$$i_s = 73 \text{ Amps} \quad R_1 = 561 \, \Omega \text{ (Ohms)} \quad R_2 = 327 \, \Omega \text{ (Ohms)}$$

Find the current i_1 .Answer: 

Calculated question

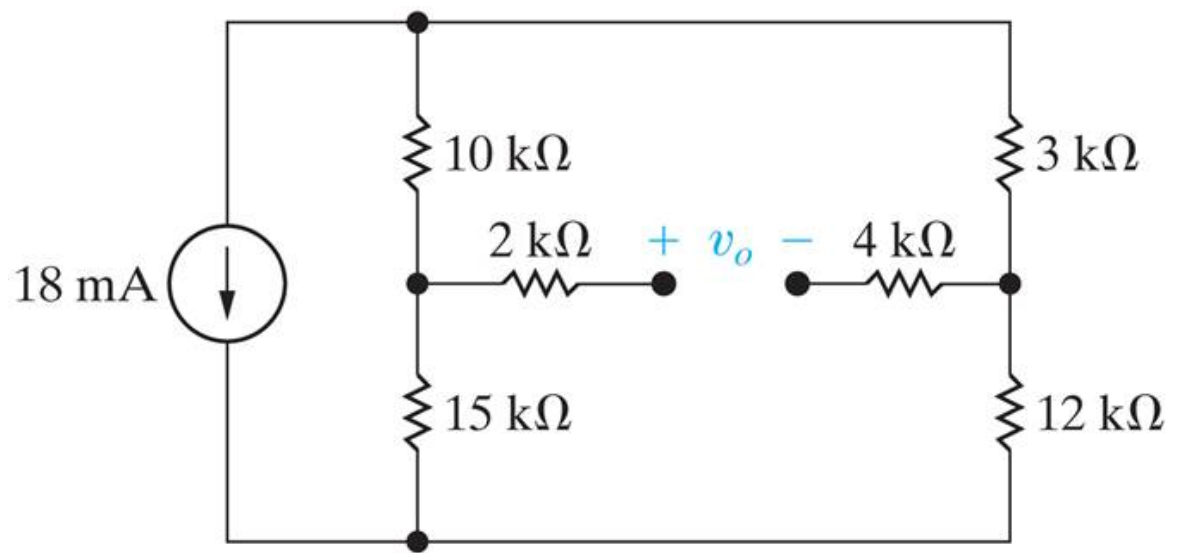
The correct answer is: 26.88

Correct

Marks for this submission: 10.00/10.00.

Question 6

Correct

Mark 10.00 out of
10.00

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P3.29_10ed

Find the voltage v_o using voltage and/or current division.

Answer: 33.75

**Numeric Answer**

$$v_o = 33.75 \text{ V}$$

The correct answer is: 33.75

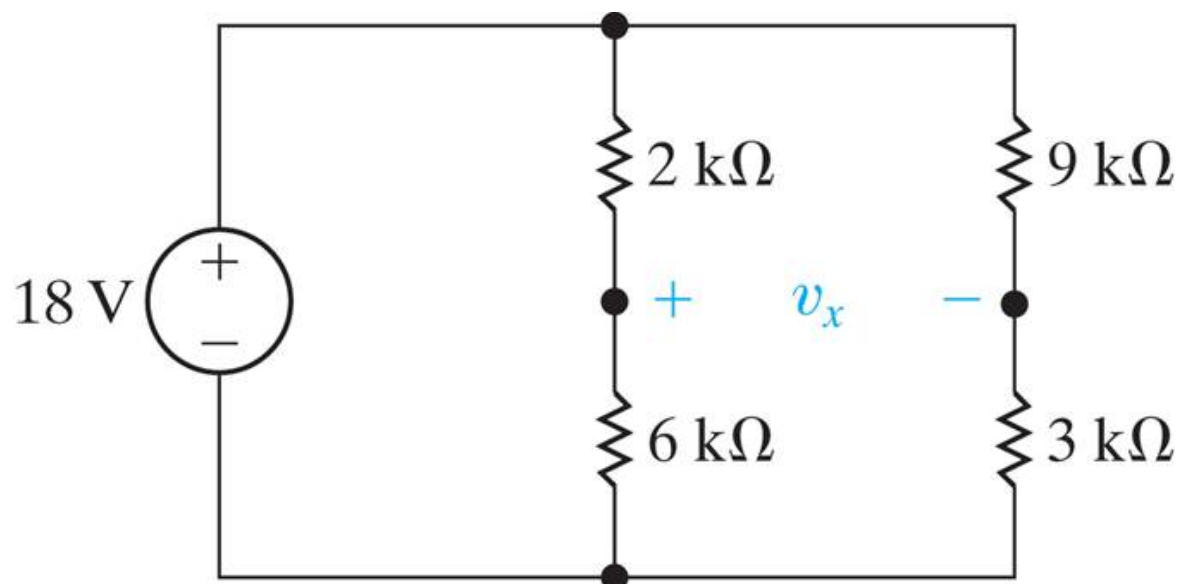
Correct

Marks for this submission: 10.00/10.00.

Question 7

Correct

Mark 10.00 out of 10.00



P3.28_10ed

Find the voltage v_x using voltage and/or current division.

Answer: 9

**Numeric Answer**

$$v_x = 9 \text{ V}$$

The correct answer is: 9

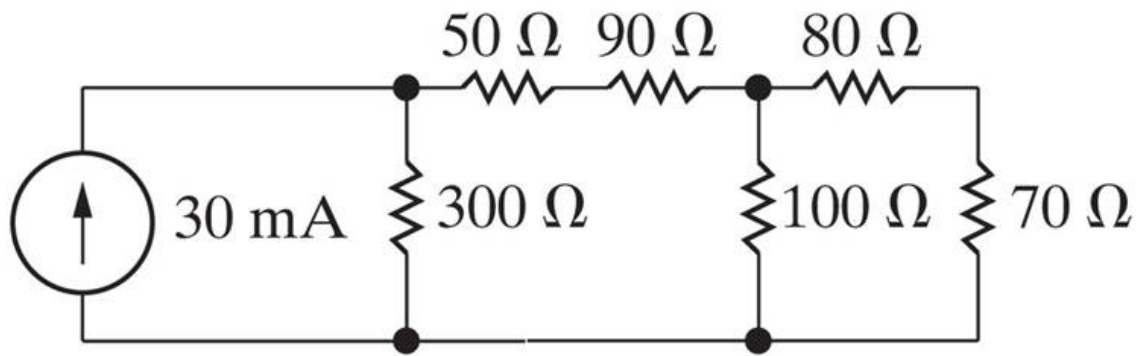
Correct

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Question 8

Correct

Mark 10.00 out of 10.00



P3.24_10ed

a) Use current division to find the current in the 50 Ω (Ohm) resistor..

$$I_{50\Omega} = 18 \text{ mA}$$

b) Use $I_{50\Omega}$ result from part (a) and current division to find the current in 70 Ω (Ohm) resistor.

$$I_{70\Omega} = 7.2 \text{ mA}$$

Numeric Answer

a) $I_{50\Omega} = 18 \text{ mA}$

b) $I_{70\Omega} = 7.2 \text{ mA}$

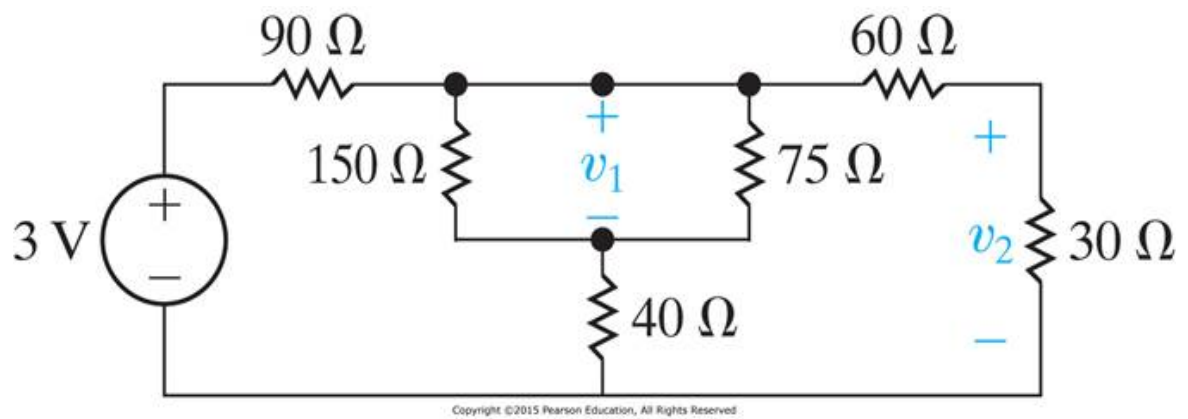
Correct

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Question 9

Correct

Mark 10.00 out of 10.00



P3.30_10ed

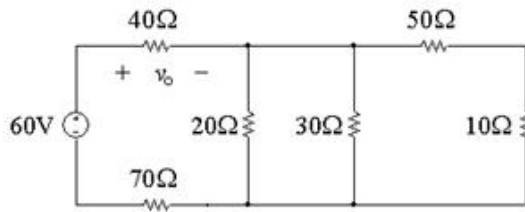
Find the voltage v_1 and v_2 using voltage and/or current division. $v_1 =$ ✓ Volts $v_2 =$ ✓ Volts**Numeric Answer** $v_1 = 5/9 \text{ V} = 0.556 \text{ Volts}$ $v_2 = 3/9 \text{ V} = 0.333 \text{ Volts}$ **Correct**

Marks for this submission: 10.00/10.00.

Question 10

Correct

Mark 10.00 out of 10.00



AP3.04_9ed

a) Use voltage division to determine the voltage v_o across the $40\ \Omega$ (Ohm) resistor.

$$v_o = 20 \text{ Volts}$$

b) Use v_o from part a) to determine the current through the $40\ \Omega$ (Ohm) resistor, and use this current and current division to calculate the current in the $30\ \Omega$ (Ohm) resistor.

$$I_{30\Omega} = 166.67 \text{ mA (milli A)}$$

c) How much power is absorbed by the $50\ \Omega$ (Ohm) resistor?

$$P_{50\Omega} = 347.22 \text{ mW (milli W)}$$

“-” = delivering and “+” = absorbing power

Numeric Answer

a) $v_o = 20 \text{ V}$

b) $I_{30\Omega} = 166.67 \text{ mA}$

c) $P_{50\Omega} = 347.22 \text{ mW}$

Correct

Marks for this submission: 10.00/10.00.