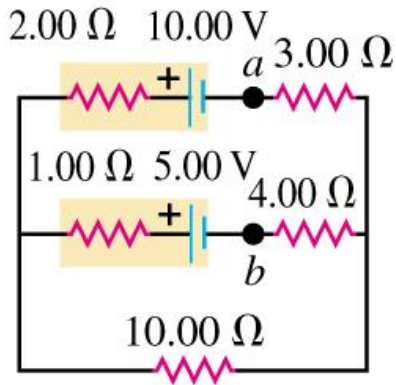


home / study / science / physics / questions and answers / a) in the circuit shown in the figure , find the ...

## Question



- A) In the circuit shown in the figure , find the magnitude of current in the upper branch.  
 B) Find the magnitude of current in the middle branch.  
 C) Find the magnitude of current in the lower branch.

## Your Chegg Study

Post a question

Enter question

Continue to post

20 questions remaining

View all questions »

Your textbook solutions



Solutions



BOOKS STUDY MORE



Find books, solutions, tutors and more...

14th Edition 1st Edition 2nd Edition

## Best Answer



Anonymous answered this 1 hour later  
486 answers

Was this answer helpful?

3

0

the kirchoff's loop eqns in upper loop is  
 $-2I_a - 10 - 3I_a + 4I_b + 5 + I_b = 0$

$$\Rightarrow 5I_b - 5I_a = 5$$

$$\Rightarrow I_a = I_b - 1 \dots \dots \dots (1)$$

for lower loop

$$-I_b - 5 - 4I_b + 10I_c = 0$$

$$\Rightarrow 10I_c - 5I_b = 5$$

$$\Rightarrow 2I_c - I_b = 1$$

$$\Rightarrow I_b = 2I_c - 1 \dots \dots \dots (2)$$

also

$$I_a + I_b + I_c = 0$$

$$\Rightarrow I_b - 1 + I_b + I_c = 0$$

$$\Rightarrow 2I_b + I_c = 1$$

$$\Rightarrow 4I_c - 2 + I_c = 1$$

$$\Rightarrow 5I_c = 3$$

$$\Rightarrow I_c = 3/5 = 0.6$$

$$\text{so } I_b = 2I_c - 1 = 0.2$$

$$I_a = I_b - 1 = -0.8$$

a) magnitude of current in upper branch =  $|I_a| = 0.8$  A

b) magnitude of current in middle branch =  $|I_b| = 0.2$  A

c) magnitude of current in lower branch =  $|I_c| = 0.6$  A

d) between a and b

$$V_a - 3I_a + 4I_b - V_b = 0$$

$$\Rightarrow V_a - V_b = 3I_a - 4I_b = -3 \times 0.8 - 4 \times 0.2 = -2.4 - 0.8 = -3.2 \text{ V}$$

Comment >

People who viewed this  
also viewed these  
solutions



University Physics (13th  
Edition)  
Hugh D. Young



University Physics with  
Modern Physics (13th  
Edition)  
Hugh D. Young

Physics tutors who can help right now



Mohit N.  
West Bengal Univers...

18



Mohammad P.  
UCLA

4047

## More Answers



rockon79 answered this 33 minutes later  
421 answers

Was this answer helpful?

0

0

- A) 1.14 AMP
- B) 0.42 AMP
- C) 0.72 AMP
- D) 5.1 V

View comments (1) >



Kevin C.  
Carnegie Mellon Uni...

253

Find me a tutor

## Practice with similar questions

**Q:** In the circuit shown in the figure (Figure 1). find the magnitude of current in the upper branch. Find the magnitude of current in the middle branch. magnitude of current in the

**A:** See answer

**Q:** In the circuit shown in the figure (Figure 1). find the magnitude of current in the upper branch. Find the magnitude of current in the middle branch. Find the magnitude of current

**A:** See answer

Show more questions [+]

### ABOUT CHEGG

Media Center  
Chegg For Good  
College Marketing  
Privacy Policy  
Your CA Privacy Rights  
Terms of Use  
General Policies  
Intellectual Property Rights  
Investor Relations  
Enrollment Services

### RESOURCES

Site Map  
Mobile  
Publishers  
Join Our Affiliate Program  
Advertising Choices

### TEXTBOOK LINKS

Return Your Books  
Textbook Rental  
eTextbooks  
Used Textbooks  
Cheap Textbooks  
College Textbooks  
Sell Textbooks

### STUDENT SERVICES

Chegg Coupon  
Scholarships  
Career Search  
Internships  
College Search  
College Majors  
Scholarship Redemption

### COMPANY

Chegg College  
Blog  
Jobs  
Customer Service  
Give Us Feedback  
Become a Tutor

### LEARNING SERVICES

Online Tutoring  
Chegg Study Help  
Solutions Manual  
Tutors by City  
GPA Calculator  
Test Prep



Over 6 million  
trees planted

© 2003-2016 Chegg Inc. All rights reserved.

