

**CASE WESTERN RESERVE UNIVERSITY**  
Case School of Engineering  
Department of Electrical Engineering and Computer Science  
**ENGR 210. Introduction to Circuits and Instruments (4)**

Quiz No. 3

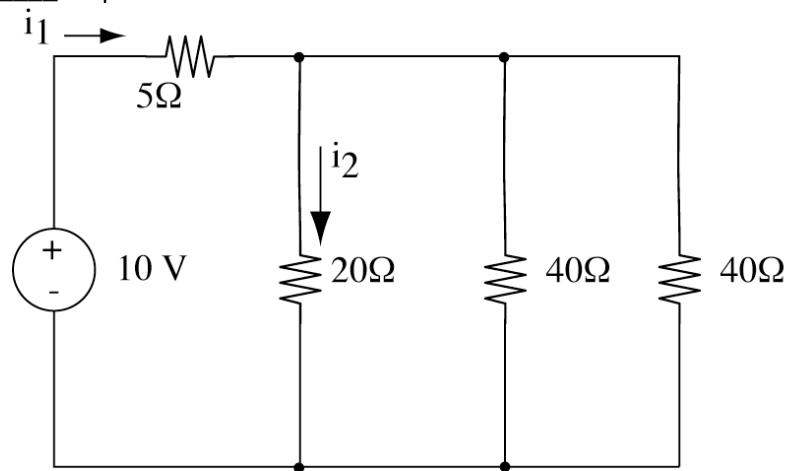
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**PUT ANSWERS IN THE SPACE PROVIDED AND SHOW YOUR WORK IF APPROPRIATE**  
**STATE ALL ASSUMPTIONS**

**EQUIVALENT CIRCUITS. VOLTAGE AND CURRENT DIVISION**

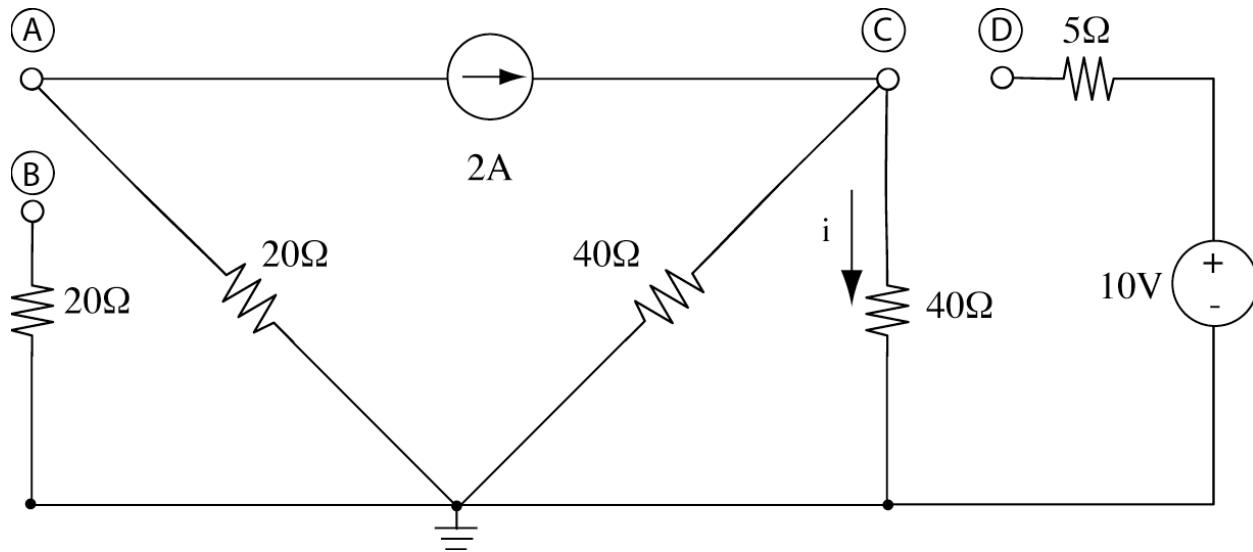
1. (10 points) Determine the current  $i_2$  going through the  $20\Omega$  resistor in the circuit shown below.

$i_2 =$  \_\_\_\_\_ amperes



**COMBINED CONSTRAINTS**

2. (10 points) Determine the numerical values of the indicated parameters for the circuit shown below. Be sure to observe the indicated current direction and voltage polarity in your answer.



$V_D$ , the voltage at point D with respect to ground	
$i$ , the current through the vertical $40\Omega$ resistor (note the indicated direction)	
$V_C$ , the voltage at point C with respect to ground	
$V_B$ , the voltage at point B with respect to ground	
$V_A$ , the voltage at point A with respect to ground	