

Physics 112
Quiz #16
October 27, 2000

Name: _____

IF YOU WANT A QUESTION GRADED OUT OF THREE POINTS (-1 [MINUS ONE] FOR WRONG ANSWER!!) WRITE "3" IN SPACE PROVIDED ON EACH QUESTION.

1. In a parallel circuit, a three-ohm resistor and a six-ohm resistor are connected to a battery. In a series circuit, a four-ohm and an eight-ohm resistor are connected to a battery that has the *same* voltage as the battery in the parallel circuit. What will be the ratio of the current through the six-ohm resistor to the current through the four-ohm resistor? Current through six-ohm resistor divided by current through four-ohm resistor is:
- greater than one
 - equal to one
 - less than one
 - equal to negative one
 - cannot determine without knowing the battery voltage

Grade out of 3? Write "3" here: _____

2. Parallel circuit: $R_A = 6 \Omega$; $R_B = 9 \Omega$.
Series circuit: $R_C = 7 \Omega$; $R_D = 3 \Omega$.

$\Delta V_{bat}(\text{series}) = \Delta V_{bat}(\text{parallel})$

- A. $\frac{I_B}{I_C} > 1$ B. $\frac{I_B}{I_C} = 1$ C. $\frac{I_B}{I_C} < 1$ D. $\frac{I_B}{I_C} = -1$ E. need ΔV_{bat}

Grade out of 3? Write "3" here: _____

3. The arrows represent the magnitude and direction of the current through resistors A and C. Choose the correct diagram.

A.

B.

C.

D.

E. need to know ΔV_{bat}

[A] $\xrightarrow{I_A}$ $\xrightarrow{I_C}$

[B] $\xrightarrow{\quad}$ $\xrightarrow{\quad}$

[C] $\xrightarrow{\quad}$ $\xrightarrow{\quad}$

[D] $\xrightarrow{\quad}$ $\xleftarrow{\quad}$

Grade out of 3? Write "3" here: _____

[E] (need to know ΔV_{bat})

4. Graph #1 represents the relative resistances of resistors A, B, C, and D. Resistors A and B are connected in a parallel circuit. Resistors C and D are connected in a series circuit. The battery voltage in both circuits is the same. Graph #2 represents the currents in resistors C and B respectively. Which pair is correct?

A.

B.

C.

D.

E. need to know voltage

#1

resistance

#2

current

Grade out of 3? Write "3" here _____