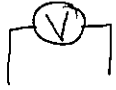
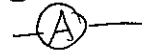


## Voltmeters in Parallel

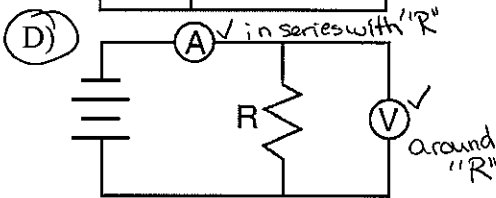
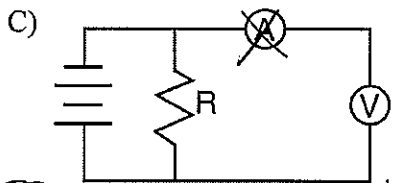
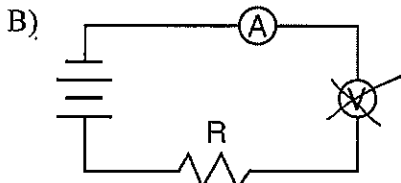
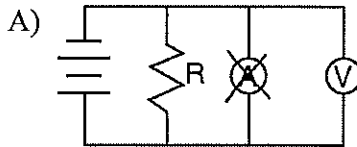


## Ammeter in Series



### Skill 42-Meters and Circuit Symbols

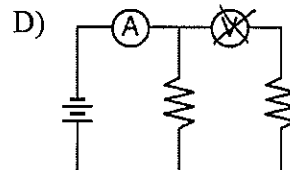
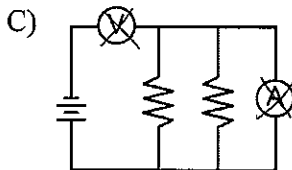
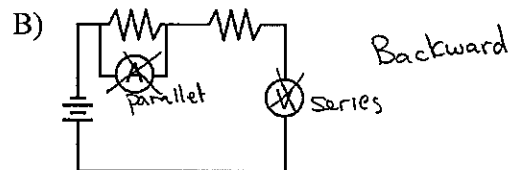
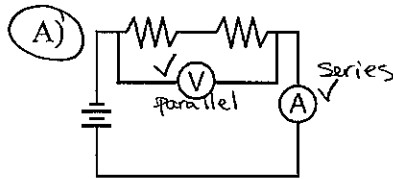
149. Which circuit diagram below correctly shows the connection of ammeter  $A$  and voltmeter  $V$  to measure the current through and potential difference across resistor  $R$ ?



Current must pass through an ammeter (in series)

Voltage (Potential Difference) must be measured from outside (parallel)

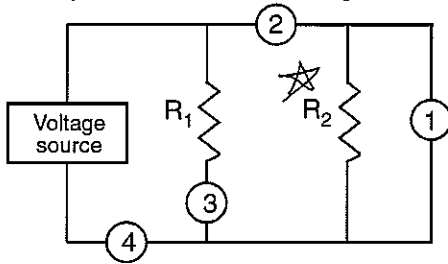
150. Which circuit diagram shows voltmeter  $V$  and ammeter  $A$  correctly positioned to measure the total potential difference of the circuit and the current through each resistor?



Current through resistor is the same in a series circuit so you only need one.

## Skill 42-Meters and Circuit Symbols

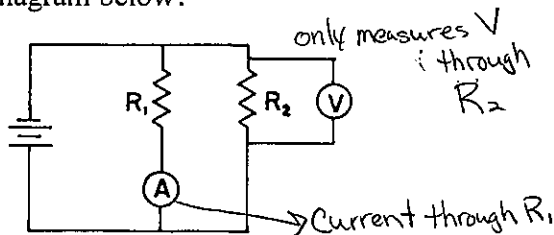
151. Two resistors are connected to a source of voltage as shown in the diagram below.



At which position should an ammeter be placed to measure the current passing only through resistor  $R_1$ ?

- A) 1 parallel  
 B) 2  
 C) 3 measures  $R_1$   
 D) 4 measures combo of  $R_1$  &  $R_2$

152. What quantities may be *directly* measured by the arrangement of meters shown in the diagram below?

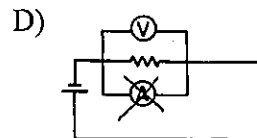
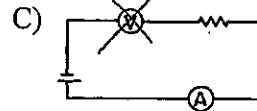
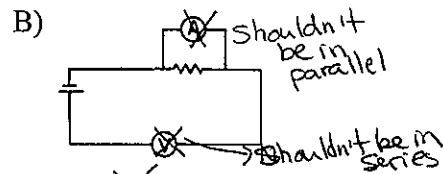
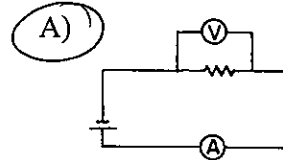


- A) voltage drop across  $R_2$  and current through  $R_2$   
 B) current through  $R_1$  and  $R_2$   
 C) current through  $R_1$  and voltage drop across  $R_2$   
 D) the resistance of  $R_1$  and  $R_2$

153. In simple electrical circuits, connecting wires are assumed to have a resistance of

- A) one ohm  
 B) greater than one ohm  
 C) less than zero ohms  
 D) zero ohms  
 only count resistors & lamps etc

154. In the circuits represented below, the symbol for the ammeter is  $A$  and the symbol for the voltmeter is  $V$ . Which diagram represents the proper connections for determining the resistance of the circuit?



to find "R"  
 you need  
 $I$  &  $R$

155. A student uses a voltmeter to measure the potential difference across a circuit resistor. To obtain a correct reading, the student must connect the voltmeter

- A) in parallel with the circuit resistor  
 B) in series with the circuit resistor  
 C) before connecting the other circuit components  
 D) after connecting the other circuit components

## Skill 42-Meters and Circuit Symbols

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156. Which statement about ammeters and voltmeters is correct?
- A) The internal resistance of both meters should be low.
  - ☒ B) Both meters should have a negligible effect on the circuit being measured.
  - C) The potential drop across both meters should be made as large as possible.
  - D) The scale range on both meters must be the same.
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