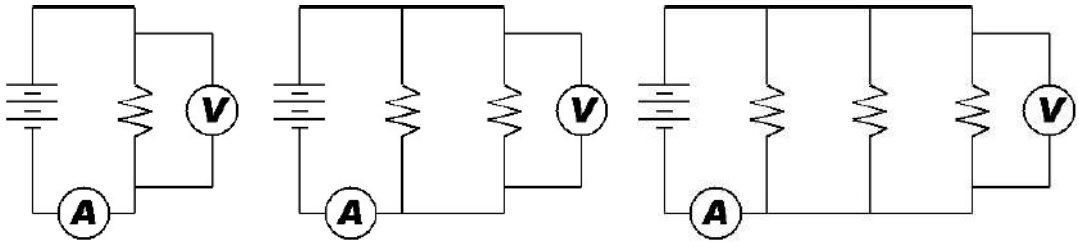
NAME _____ DATE _____

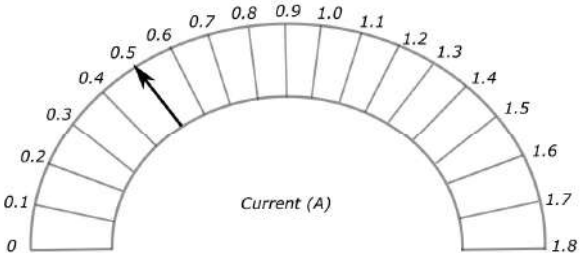


Circuit A Circuit B Circuit C

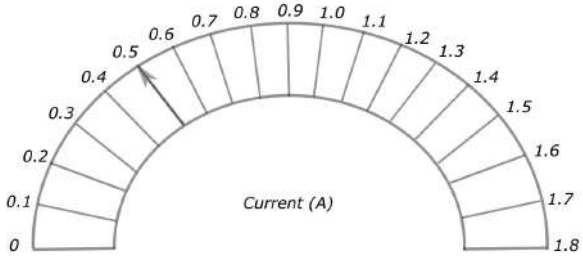
Scenario

Carlos connects each of the circuits shown above. The batteries are identical and ideal. The resistors are identical, and all meters are ideal.

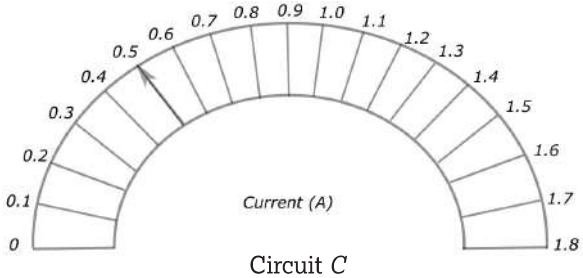
PART A: Carlos draws the reading on the ammeter for Circuit A as shown below. Draw what the other two ammeters should read. In the other two diagrams, the reading for Circuit A is shown for reference.



Circuit *A*

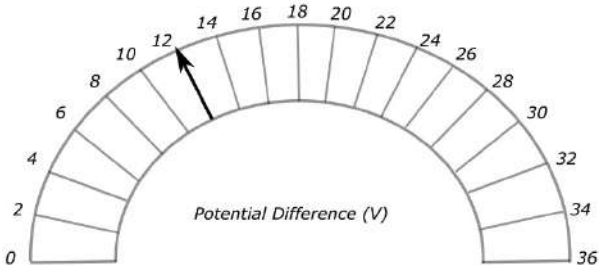


Circuit *B*

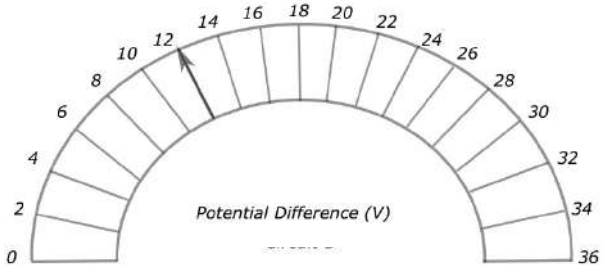


Circuit *C*

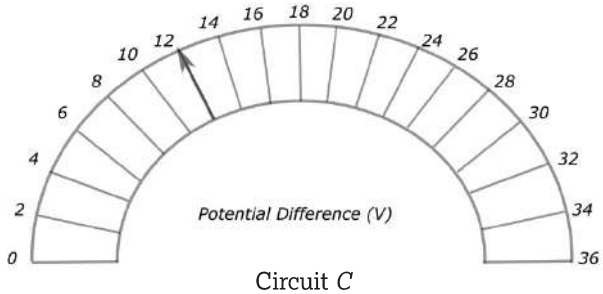
PART B: Carlos draws the reading on the voltmeter for Circuit A as shown below. Draw what the other two voltmeters should read. In the other two diagrams, the reading for Circuit A is shown for reference.



Circuit A



Circuit B



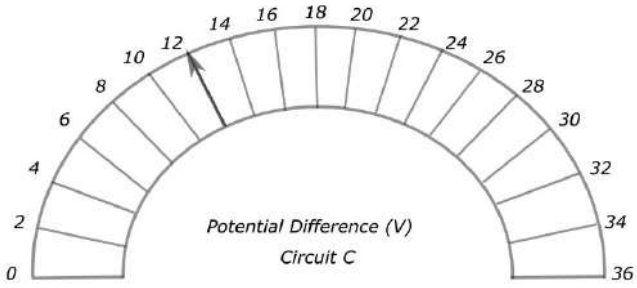
Circuit C

PART C: Complete the following two sentences:

If the power delivered by the battery in Circuit A is P, then the power delivered by the battery in Circuit B is _____.

If the power delivered by the battery in Circuit A is P, then the power delivered by the battery in Circuit C is _____.

PART D: Suppose the battery has internal resistance. (Internal resistance is like having a small resistor in series with the battery enclosed in the battery housing.) Draw a possible reading for the voltmeter for Circuit C.



Circuit C