Name **Part 2 Review G**

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1. A 25.0-meter length of platinum wire with a cross-sectional area of $3.50 \times 10^{-6}\ \text{meter}^2$ has a resistance of 0.757 ohm at 20°C. Calculate the resistivity of the wire. [Show all work, including the equation and substitution with units.]

Base your answers to questions **2** through **4** on the information below.

The centers of two small charged particles are separated by a distance of 1.2×10^{-4} meter. The charges on the particles are $+8.0 \times 10^{-19}$ coulomb and $+4.8 \times 10^{-19}$ coulomb, respectively.

2. On the diagram below, draw *at least four* electric field lines in the region between the two positively charged particles.

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3. On the axes below, sketch a graph showing the relationship between the magnitude of the electrostatic force between the two charged particles and the distance between the centers of the particles.

4. Calculate the magnitude of the electrostatic force between these two particles. [Show all work, including the equation and substitution with units.]

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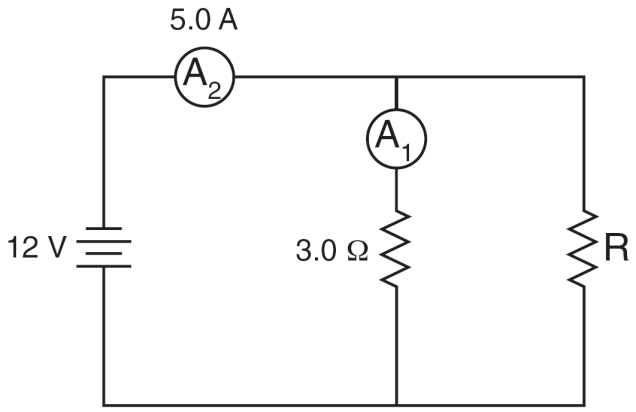
Base your answers to questions **5** through **7** on the information below.

A 3.0-ohm resistor, an unknown resistor, *R*, and two ammeters, A_1 and A_2, are connected as shown with a 12-volt source. Ammeter A_2 reads a current of 5.0 amperes.



5. Calculate the resistance of the unknown resistor, *R*. [Show all work, including the equation and substitution with units.]

6. Calculate the current measured by ammeter A_1. [Show all work, including the equation and substitution with units.]

7. Determine the equivalent resistance of the circuit.