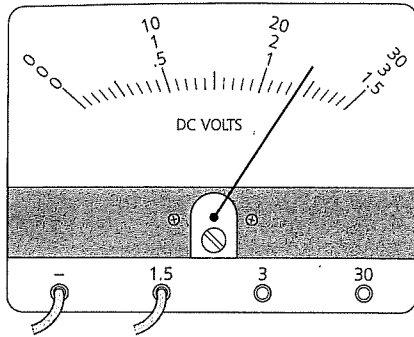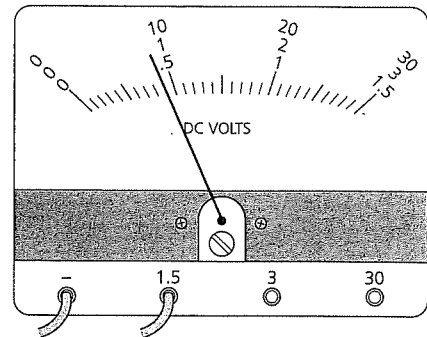# Reading an Analog Voltmeter Problems

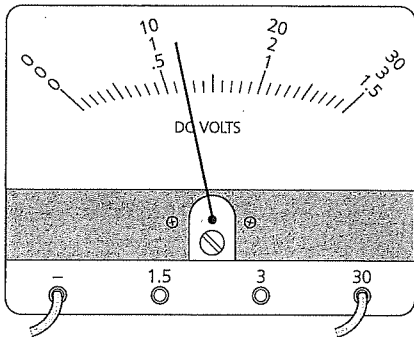Determine the value of voltage indicated in the following voltmeters.

(a) _____

(b) _____

(c) _____
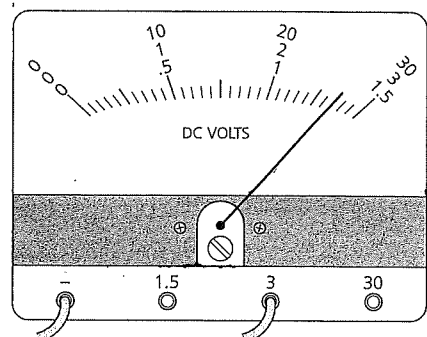
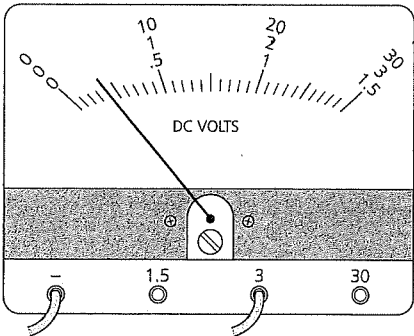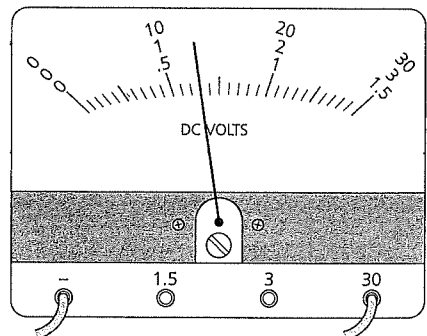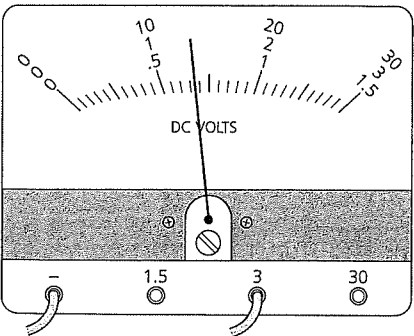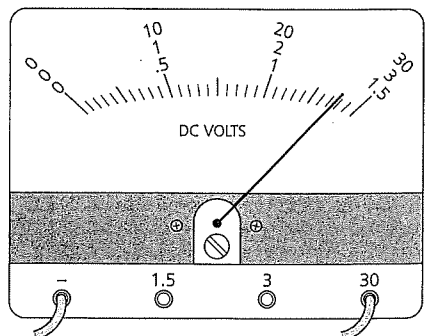
(d) _____

(e) _____

(f) _____

(g) _____

(h) _____

Voltage, Energy, and Charge Problems

1. A flashlight battery is made with two AAA cells. The cells each have a total charge of 6480 C and have 9720 J of potential energy. What is the voltage of the cells?

2. During the time that a light bulb was on, it converted 54 kJ of energy into light energy and heat energy. The light bulb was plugged into a 120 V outlet. What amount of charge, in coulombs, passed through the light bulb while it was on?

3. A Van de Graaff dome has a voltage of 350 kV and a charge of 73 μC. How much electric potential energy does the charge have?

4. A car battery has a voltage of 12 V and uses 151 kJ of energy to start a car. How much electric charge does the battery hold?

5. A capacitor is a device that stores energy. The capacitor of a camera flash unit has a charge of 0.83 C and a voltage of 480 V. How much energy is stored in the capacitor to convert electrical energy into light energy?

6. An electron has a charge of 1.6×10^{-19} C. An electron in a television uses 1.2×10^{-15} J of energy to accelerate it toward the screen. What voltage is used to accelerate the electron?

7. A lithium photo battery has a voltage of 6 V and energy of 5400 J.
   (a) What is the amount of charge in the battery?

   (b) How many electrons is this?