

1. What voltage difference will produce a current of 0.25 (A) through a 4.0 ohm resistor? (a) 16 (V) (b) 2.0 (V) (c) 1.0 (V) (d) none of the above
2. What power dissipation P (rate of heat production) occurs when a 0.25 (A)-current flows through a 4.0 ohm resistor?
(a) 1.0 (W) (b) 0.25 (W) (c) 16 (W) (d) none of the above
3. The resistivity ρ of the material of a wire is proportional to the length of the wire. True or False. (a) True (b) False
4. The resistance R of a wire is proportional to the length of the wire. True or False.
(a) True (b) False
5. A resistor R and capacitor C in series are connected across the terminals of a battery at constant voltage ε . After the switch is closed to complete the RC circuit, the charge Q on the positive plate of the capacitor increases *linearly* with time until maximum charge is reached. (a) True (b) False
6. Magnetic field lines come out of the south pole and enter the north pole of a magnet. (a) True (b) False
7. The magnetic force on a moving charged particle is perpendicular to the velocity of the particle. (a) True (b) False
8. The magnetic force on a moving charged particle is perpendicular to the magnetic field. (a) True (b) False
9. A straight segment of wire of length L carries a current I in an external magnetic field. The wire segment will experience a maximum magnetic force if (a) the magnetic field is parallel to the wire (b) the magnetic field is perpendicular to the wire.
10. A charged particle moves in an external magnetic field. The charged particle will experience a maximum magnetic force if (a) the magnetic field is parallel to the charge's velocity (b) the magnetic field is perpendicular to the charge's velocity
11. Magnetic field lines come out of the EARTH'S GEOGRAPHIC South Pole and enter the EARTH'S GEOGRAPHIC North Pole. (a) True (b) False *BC careful!*
12. MAGNETIC CHARGES (MONO-POLES) have been discovered in nature.
(a) True (b) False