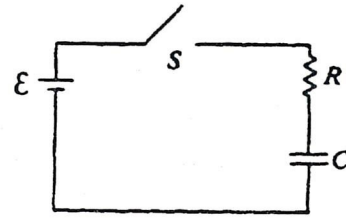
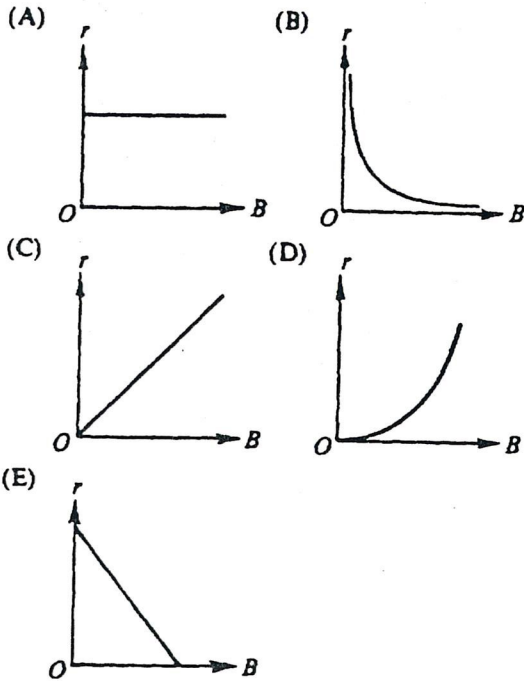


59. A negatively charged particle in a uniform magnetic field \mathbf{B} moves with constant speed v in a circular path of radius r , as shown above. Which of the following graphs best represents the radius r as a function of the magnitude of \mathbf{B} , if the speed v is constant?



60. In the circuit shown above, the capacitor is initially uncharged. At time $t = 0$, switch S is closed. The natural logarithmic base is e . Which of the following is true at time $t = RC$?

- (A) The current is $\frac{\epsilon}{eR}$.
 (B) The current is $\frac{\epsilon}{R}$.
 (C) The voltage across the capacitor is ϵ .
 (D) The voltage across the capacitor is $\frac{\epsilon}{e}$.
 (E) The voltages across the capacitor and resistor are equal.

61. Which of the following equations implies that it is impossible to isolate a magnetic pole?

- (A) $\oint \mathbf{E} \cdot d\mathbf{A} = q/\epsilon_0$
 (B) $\oint \mathbf{E} \cdot d\mathbf{l} = -d\Phi_E/dt$
 (C) $\oint \mathbf{B} \cdot d\mathbf{A} = 0$
 (D) $\oint \mathbf{B} \cdot d\mathbf{l} = \mu_0 i + \mu_0 \epsilon_0 d\Phi_E/dt$
 (E) None of the above