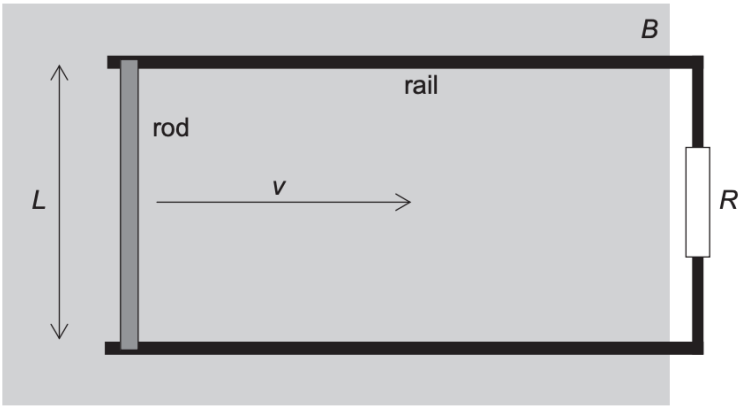
24 A conducting rod of length *L* is moved in a region of uniform magnetic field of flux density *B*. The field is directed at right angles to the plane of the paper. The rod slides on conducting rails at a constant speed *v*. A resistor of resistance *R* connects the rails as shown in the figure below.



Which statement is true?

A The magnetic force on the rod is directly proportional to *B*.
B The magnetic force is independent of *R*.
C Increasing the length of the rod will increase the induced current in the rod.
D The power required to move the rod is proportional to the square of the velocity