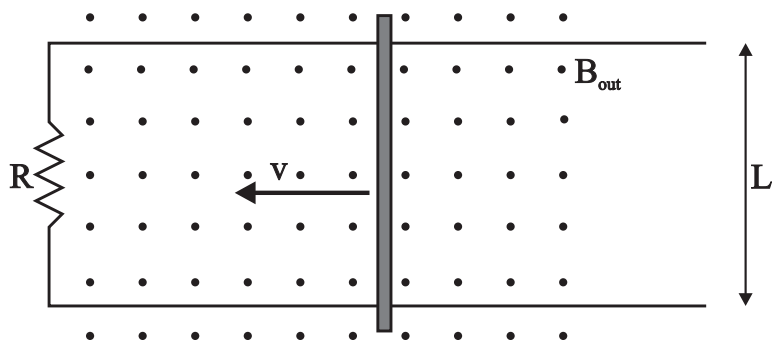


NAME _____
PERIOD _____ DATE _____

PHYSICS QUIZ #47 D
MAGNETIC INDUCTION

Consider two parallel, conducting rails connected together at one end by a resistance of $R = 65.0 \Omega$. A movable conducting bar, which has a length of $L = 32.0 \text{ cm}$ and a mass of $m = 2.20 \text{ kg}$, lies across these two rails and is being pushed toward the right at a constant velocity of $v = 14.0 \text{ m/sec}$ by a force F . This entire system is sitting in a magnetic field which has a magnitude of $B = 2.10 \text{ Tesla}$ and which is directed out of the paper as shown.



1. What will be the direction of the resulting EMF in the closed path? [3 pts]
2. What will be the magnitude of the EMF generated in the closed path? [3 pts]
3. What will be the magnitude of the current flow in this closed path? [3 pts]
4. How much force F would be required to push this bar to the right at the given velocity? [3 pts]
5. At what rate is energy being dissipated in this circuit? [3 pts]