

Motional emf

A metal bar PQ is placed on a long friction-less metal rails which are inclined at an angle θ above the horizontal. There is a circuit connected with a battery and a resistor. The rails have negligible resistance. A uniform magnetic field B is directed upward. When $\theta = \theta_1$, the metal bar PQ was at rest due to gravitational force. When we set the angle smaller than θ_1 , how will the metal bar PQ move after a long enough time?

- a) It will move upwards and approach a constant velocity.
- b) It will move downwards and approach a constant velocity.
- c) It will move upwards and gradually stop.
- d) It will move downwards and gradually stop.
- e) I don't know.

