Inan/2007/Q2

Neglect friction and mass of bars.
State All Other Assumptions.
Bar#1 is moved at constant velocity $v=1$ m/s
The B-field is everywhere; linearly increases with time
$B_0=1$ wb/m^2

1) How much power is dissipated in R_1 at $t=2$ s ?
2) Does Bar#2 move as a result of the motion of Bar#1?
   If so, in what direction?   What speed?

Perfectly Conducting Rails   Moving Bar #1

$R_1=1\Omega$

$\odot$ $\mathbf{B}=B_0 t$

$\rightarrow \mathbf{v}$

1 m

2 m at $t=0$

10 cm

$R_2=1\Omega$

$\odot$ $\mathbf{B}=B_0 t$

1 m

Perfectly Conducting Rails   Moving Bar #2