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| **86.** | In Fig. [27-77](http://edugen.wiley.com/edugen/courses/crs1650/reference/xlinks/halliday8019c27xlinks.xform?id=halliday8019c27-fig-0077) , an ideal battery of emf http://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c27/math190.gifis connected to a network of resistances http://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c27/math293.gif, and http://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c27/math294.gif. What is the potential difference across resistance 5?   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | http://edugen.wiley.com/edugen/courses/crs1650/art/common/pixel.gif | |  | | --- | | http://edugen.wiley.com/edugen/courses/crs1650/art/common/pixel.gif | | |  |  |  | | --- | --- | --- | | |  | | --- | | http://edugen.wiley.com/edugen/courses/crs1650/art/common/pixel.gif | | http://edugen.wiley.com/edugen/courses/crs1650/art/images/halliday8019c27/image_t/tfg077.gif | | | | |
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| **•24.** | In Fig. [28-41](http://edugen.wiley.com/edugen/courses/crs1650/reference/xlinks/halliday8019c28xlinks.xform?id=halliday8019c28-fig-0041) , a particle moves along a circle in a region of uniform magnetic field of magnitude *B* = 4.00 mT. The particle is either a proton or an electron (you must decide which). It experiences a magnetic force of magnitude http://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c28/math212.gif. What are (a) the particle's speed, (b) the radius of the circle, and (c) the period of the motion? http://edugen.wiley.com/edugen/courses/crs1650/art/images/halliday8019c28/image_n/ngr008.gif   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | http://edugen.wiley.com/edugen/courses/crs1650/art/common/pixel.gif | |  | | --- | | http://edugen.wiley.com/edugen/courses/crs1650/art/common/pixel.gif | | |  |  |  | | --- | --- | --- | | |  | | --- | | http://edugen.wiley.com/edugen/courses/crs1650/art/common/pixel.gif | | http://edugen.wiley.com/edugen/courses/crs1650/art/images/halliday8019c28/image_t/tfg041.gif | | | |  | | |
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State Faraday’s law of induction.

Chap 30 Prob 4:  
An elastic conducting material is stretched into a circular loop of 10.8 cm radius. It is placed with its plane perpendicular to a uniform 0.875 T magnetic field. When released, the radius of the loop starts to shrink at an instantaneous rate of 64.8 cm/s. What emf is induced in volts in the loop at that instant?