

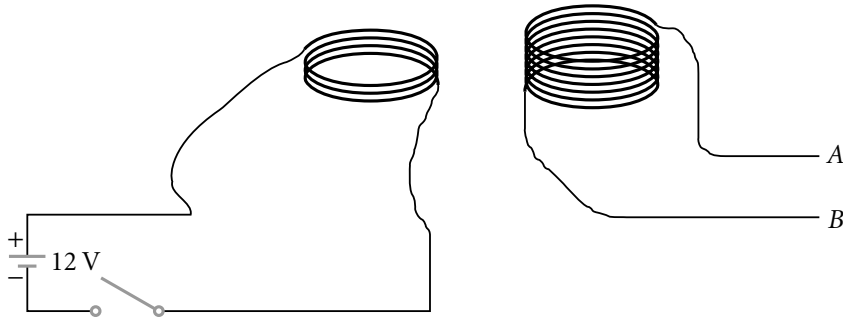
Section  
**22-3**

HOLT PHYSICS

# Concept Review

## Inductance

Use the figure below to answer the following questions.



1. Draw the magnetic field created by a clockwise current in the primary loop. Include the area outside of the loop and the part of the field that intersects the secondary loop.
2. Label terminals *A* and *B* of the secondary loop with + or – to indicate the induced emf in the loop when the primary switch is shut. (Hint: consider that the positive terminal will repel the moving positive charge.)
3. If the secondary coil has twice as many turns as the primary coil, calculate the maximum potential difference across the secondary coil—right after the primary coil is “turned on.”

\_\_\_\_\_

4. Explain why the induced emf in the secondary coil is zero when the primary switch has been shut for a long time.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. When the switch is opened after having been shut for a long time, the primary coil emf goes to zero, but the secondary coil generates a momentary emf. Explain this in terms of changing magnetic fields.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

HRW material copyrighted under notice appearing earlier in this book.