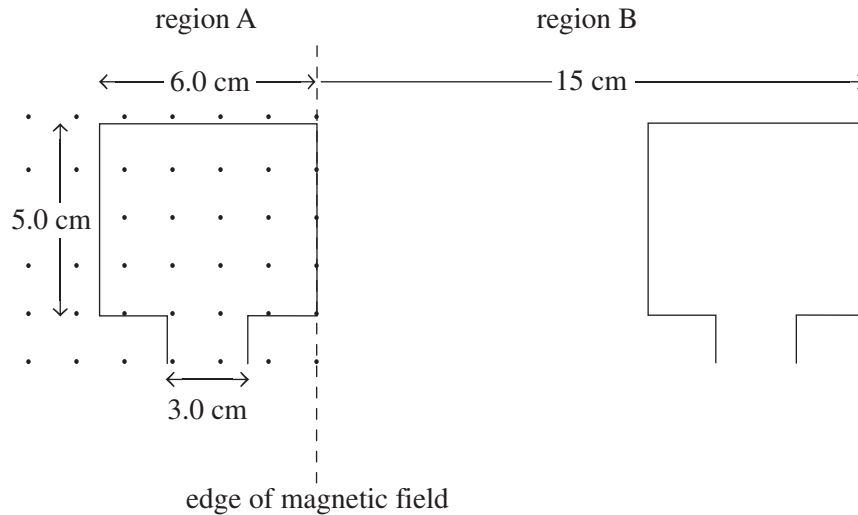


Question 3 (6 marks)

A rectangular coil of 10 turns and side lengths 5.0 cm and 6.0 cm is shown in Figure 3. The coil moves from region A (inside a magnetic field) to region B (outside the magnetic field). The magnetic field strength is 0.30 T.

Throughout its entire motion, the coil moves at 3.0 cm s^{-1} . The coil begins with its right side at the edge of the magnetic field at time $t = 0$ in region A and travels 6.0 cm in region A. In region B, it travels for 15 cm before coming to rest instantaneously.

**Figure 3**

- a. Show that the magnetic flux through the coil is $9.0 \times 10^{-4} \text{ Wb}$. 2 marks
