Question 1 (5 marks)

A DC motor is attached to a 6.00 V supply, as shown in the diagram on the right. The square coil has a side length of 8.60 cm and contains 50 turns. The total resistance of the circuit is 3.00 Ω and it sits in a 3.70×10^{-3} T magnetic field.

(a) Which way will the coil rotate when observed from X? Circle your answer.
(1 mark)

A. Clockwise

B. Anticlockwise.

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(b) Calculate the magnitude of the initial torque on the coil in the position shown in the diagram.
(4 marks)