

NAME: _____

Study Sections 5.6 - 5.7.

A U-shaped electromagnet (like the one shown in Fig. 5.31) is designed to lift a mass of 400 kg (which includes the mass of the keeper, i.e. the bottom piece). The iron yoke ($\mu_r=3000$) has a cross section of 40 cm^2 and a mean length of 50 cm, and the air gaps are each 0.1 mm long. Neglecting the reluctance of the keeper, calculate the number of turns in the coil when the excitation current is 1A.