HW: estimate inductance

• Due next Monday, Sept. 15
• You want to make a 0.1 mH inductance (to filter high-freq. noise for your sensitive circuit) using a toroid of 5 mm outer radius and 2.5 mm inner radius. The thickness of the toroid is 2 mm. How many turns do you have to wind a wire to get the desired inductance? The ferrite core material has magnetic susceptibility of 100. Assume that the cross section of the toroid is rectangle in shape (to make computation a bit easier).