

**Problem 2:** (30 pts.) A loop antenna, such as is used on a TV to pick up UHF broadcasts, is a circular loop 0.12 m in radius. The plane of the loop is perpendicular to an oscillating magnetic field given by  $B = 20 \times 10^{-9} \sin(10^9 t)$  T. What is the magnitude of the maximum emf induced in this antenna?