1. An electric field of a plane electromagnetic wave propagating in the $+z$ direction is given by $E_x = 0$, $E_y = E_0 \sin(kz - \omega t)$, $E_z = 0$, with $E_0 = 2.34 \times 10^{-4}$ V/m and $k = 9.72 \times 10^6$ m^{-1}. (a) Find the 3 components of the magnetic field of this wave. (b) Find the wavelength and frequency of this wave.

2. Just outside the atmosphere, sunlight strikes the Earth with a peak intensity of 2800 W/m^2. Calculate the amplitude of the electric field and the magnetic field for sunlight. Answer: $E_0 = 1030$ V/m