Special Problem IV.A-2

A communications link has the following parameters:

Transmit power = 10 W
Transmit antenna effective aperture (maximum) = 2.0 m^2
Receiver antenna gain (maximum) = 16 dB
Signal wavelength = 0.1 m

The transmitter and receiver are separated by a distance of 1 km, and the antennas are pointed at each other.

Determine:

1) the maximum intensity of the transmitted wave.
2) the power density of the wave at the receive antenna.

3) the received power.