1. Calculate the kinetic energy of a photoelectron emitted by a sodium surface when light of wavelength 400 nm is incident on it. The work function of sodium is 2.28 eV.

2. Plot the function \( \cos \left( \frac{n\pi x}{L} \right) \), where \( L = 5 \text{ cm} \). First set \( n = 2 \) and secondly, set \( n = 3 \). Plot the two curves on the axes below.

3. The short wavelength cutoff for glass is 350 nm. Calculate the energy of the light in eV, cm\(^{-1}\), J, and kJ mol\(^{-1}\).