Joshua Carbajal
Modeling Project Part 1
Basic Extraterrestrial Solar Irradiance Calculator

Inputs:

- Location latitude: 32
- Location longitude: -30
- PV array tilt: 15
- Day of year: 112
- Civil time of day, in hours: 16
- Time zone in reference to UTC: -2

Outputs:

- Extraterrestrial irradiance on plane normal to sun, G_{0n}: 1351.23 W/m^2
- Declination angle, δ (degrees): 11.93 degrees
- Hour angle, ω (degrees): 75 degrees
- Zenith angle, θ_z (degrees): 71.08 degrees
- Angle of incidence, θ (degrees): 73.29 degrees
- Cosine of the angle of incidence: 0.30
- Irradiance on the PV array ignoring the effects of the atmosphere, G_{0T}: 408.87 W/m^2