EE 446/646 – Assignment # 4.

Use TMY3 data to calculate the daily average solar energy (kWh/m^2) received by (a) a horizontal collector, and (b) a collector that faces south (ϕ_C = 0) with a tilt angle $\sum$ =36° in Las Vegas, NV during your birth month. Ignore the reflected portion of sunlight.

Guide: For each hour (ST) of your birth month, create columns for the following: day number n, declination angle δ, sun altitude angle β and azimuth angle ϕ_S*, Incidence angle θ, direct and diffuse irradiances received by the collector.

(*) Do not forget to perform a test on whether the absolute value of this angle is less or greater than 90 degrees.