

**[mex170] What is vertical?**

(a) Calculate the the angular deviation  $\epsilon$  of a plumb line from the direction to the Earth's center at a point of latitude  $\lambda$ . (b) At what latitude is does  $\epsilon$  have its maximum value? (c) State  $\epsilon_{max}$  in arc seconds. Use the value  $g = 9.81\text{m/s}^2$  for the acceleration due to gravity.

**Solution:**