

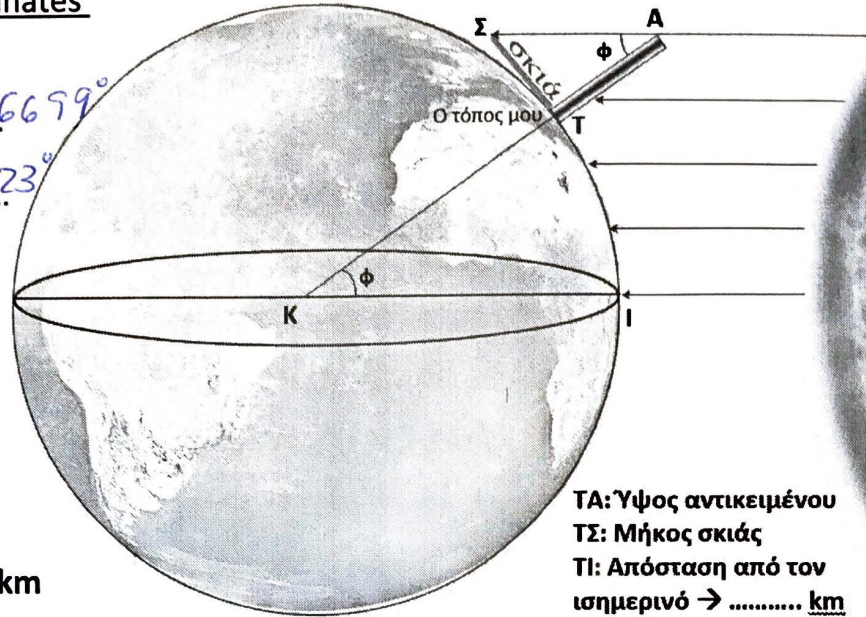
ERATOSTHENES EXPERIMENT

Calculation of Earth radius, 20-03-2019, time 12:.....

Geographical coordinates
of the school yard

Longitude *-4'776699°*

Latitude *37'861923°*



Distance from
the equator
TI = *4214'11* km

TA: Ύψος αντικειμένου
TS: Μήκος σκιάς
TI: Απόσταση από τον
ισημερινό → km

Measurements

Height of the object: TA = *117* cm

Length of the shadow: TS = *91'5* cm

Calculations

$$\text{tangent } \phi = \frac{TS}{TA} = \dots\dots\dots \text{ and } \phi = \dots\dots\dots$$

$$\frac{TI}{\phi} = \frac{\text{perimeter}}{360^\circ} \Rightarrow \dots\dots\dots$$

⇒ Circumference = *39.894'8* km

Earth Radius R = $\frac{\text{perimeter}}{2 \cdot 3,14159} = \dots\dots\dots$ Km

(Indicative value R = 6371 km) or mean Earth Radius