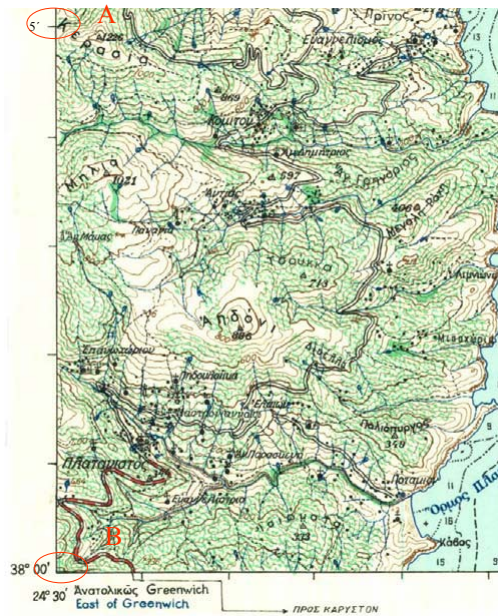


Άσκηση 1η

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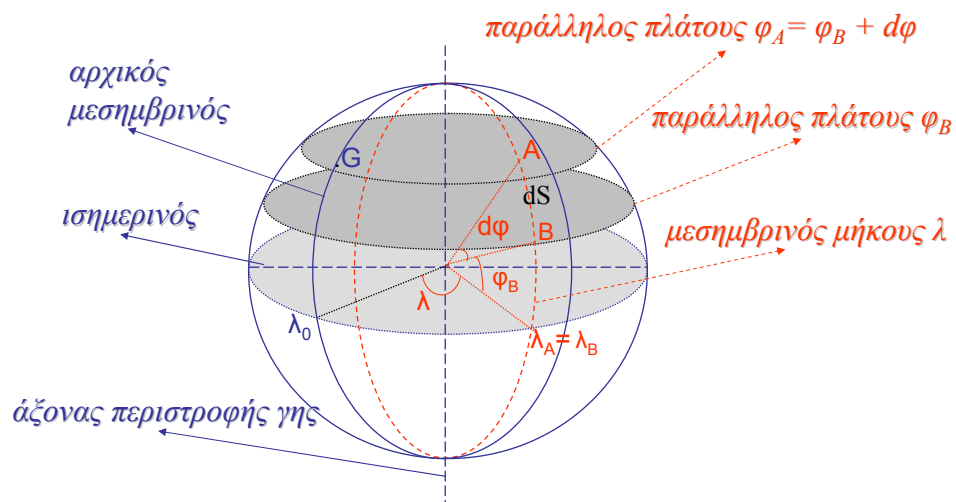
$$1. AB = 9.27 \text{ cm}$$

κλίμακα 1: 100.000

$$AB = 9.270 \text{ m}$$

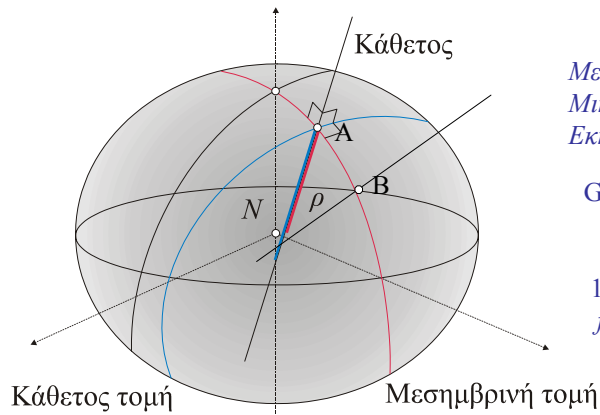
$$\varphi_A - \varphi_B = \Delta\varphi = 5'$$

2/3



$$2. (R = 6370 \text{ km}, \Delta\varphi = 5')$$

$$\Delta S = R \cdot \Delta\varphi = 6370 \cdot (5'/60')^\circ \cdot (\pi/180^\circ) = 9.265 \text{ m}$$



Μεγάλος ημιάξονας: a
 Μικρός ημιάξονας: b
 Εκκεντρότητα: $f = (a-b)/a$

GRS-80:

$$a = 6.378.137 \text{ m}$$

$$b = 6.356.752 \text{ m}$$

$$1/f = 298,257$$

$$f = 1/298,257$$

$$e = \sqrt{2f - f^2}$$

$$e = 0,081819191$$

$$M = a(1 - e^2) [M_0 \varphi - M_2 \sin 2\varphi + M_4 \sin 4\varphi - M_6 \sin 6\varphi]$$

Με:

$$M_0 = 1 + \frac{3}{4}e^2 + \frac{45}{64}e^4 + \frac{175}{256}e^6 + \dots$$

$$M_2 = \frac{3}{8}e^2 + \frac{15}{32}e^4 + \frac{525}{1024}e^6 + \dots$$

$$M_4 = \frac{15}{256}e^4 + \frac{105}{1024}e^6 + \dots$$

$$M_6 = \frac{35}{3072}e^6 + \dots$$

$$M_0 = 6367451.84$$

$$M_2 = 16034.46$$

$$M_4 = 16.82$$

$$M_6 = 0.022$$

$$M(\varphi_A - \varphi_B) = 9.250 \text{ m}$$