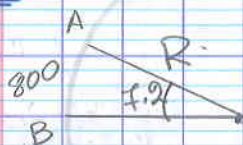


LDDR Niveau 1: TE 6 - Trigo.

Exercice 1.

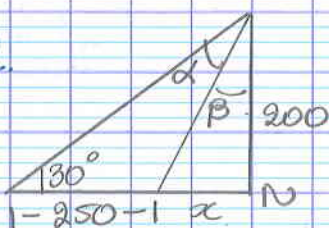


$$L = 800 = 2\pi \cdot R \cdot \frac{1.2}{360} \Rightarrow$$

$$\Rightarrow R = 6366.2 \text{ km}$$

$$C = 2\pi R = 40000 \text{ km}$$

Exercice 2.



$$\tan 30 = \frac{200}{x+250} \Rightarrow$$

$$\Rightarrow x+250 = \frac{200}{\frac{1}{\sqrt{3}}} = \frac{600}{\sqrt{3}} \Rightarrow$$

$$\Rightarrow x = \frac{600}{\sqrt{3}} - 250 \Rightarrow x = 96.4 \text{ m}$$

$$\tan \beta = \frac{x}{200} = \frac{96.4}{200} \Rightarrow \beta = 25.73^\circ$$

$$\tan(\alpha + \beta) = \frac{250 + 96.4}{200} \Rightarrow \alpha + \beta \approx 60^\circ \Rightarrow$$

$$\alpha = 60 - \beta \Rightarrow \alpha = 34.27^\circ$$

Exercice 3 a. $\tan(2x) = \sqrt{3} \Rightarrow 2x = \frac{\pi}{3} + k\pi \Rightarrow x = \frac{\pi}{6} + \frac{k\pi}{2}$

b. $\cos(4x) = \cos(3x - \frac{\pi}{3}) \Rightarrow$

$$\begin{cases} 4x = 3x - \frac{\pi}{3} + 2k\pi \\ 4x = -3x + \frac{\pi}{3} + 2k\pi \end{cases} \Rightarrow \begin{cases} x = -\frac{\pi}{3} + 2k\pi \\ 4x = -\frac{2\pi}{3} + 2k\pi \end{cases} \Rightarrow$$

$$\begin{cases} x = +\frac{2\pi}{3} + k\pi \\ x = -\frac{\pi}{6} + \frac{k\pi}{2} \end{cases}$$

$$c) 2\sin^2(x) + 7\sin x - 4 = 0 \Rightarrow \sin x = t$$

$$2t^2 + 7t - 4 = 0 \quad \Delta = 81 \quad t_{1,2} = \frac{-7 \pm 9}{4} \quad \begin{cases} t_1 = \frac{1}{2} \\ t_2 = -4 \end{cases}$$

$$\sin x = \frac{1}{2} \Rightarrow \begin{cases} x = \frac{\pi}{6} + 2k\pi \\ x = \pi - \frac{\pi}{6} + 2k\pi = \frac{5\pi}{6} + 2k\pi \end{cases}$$

$$\sin x = -4 \quad \text{impossible}$$