

Trigonométrie

Exercice 1

a) $AB = 48,5 \cdot \sin(5,16) \cong 4,36 \text{ m}$

b) $\sphericalangle AHB = \arcsin\left(\frac{4,76}{48,5}\right) \cong 5,63^\circ$

Exercice 2

a) 150°

b) $171,89^\circ$

c) -54°

d) $45,84^\circ$

1) $\frac{2\pi}{5}$

2) $\frac{\pi}{12}$

3) $-\frac{3\pi}{10}$

4) $\frac{5\pi}{3}$

Exercice 3

$$10^\circ 15' = 10,25^\circ$$

distance entre les deux villes : $6370 \cdot 10,25 \cdot \frac{\pi}{180} \cong 1139,57 \text{ km}$

Exercice 4

Théorème de Pythagore : $c = \sqrt{6^2 + 9^2} = \sqrt{117} = 3\sqrt{13} \simeq 10,82 \text{ cm}$

$$\tan(\alpha) = \frac{6}{9} \Leftrightarrow \alpha = \arctan\left(\frac{6}{9}\right) \simeq 33,69^\circ \quad \beta = 90 - \alpha \simeq 56,31^\circ$$

$$\text{aire du } \triangle ABC = \frac{6 \cdot 9}{2} = 27 \text{ cm}^2$$

Exercice 5

$$\gamma = 90 - \alpha = 55^\circ$$

$$\sin(35^\circ) = \frac{5}{b} \Leftrightarrow b = \frac{5}{\sin(35^\circ)} \simeq 8,72 \text{ cm}$$

$$\tan(35^\circ) = \frac{5}{c} \Leftrightarrow c = \frac{5}{\tan(35^\circ)} \simeq 7,14 \text{ cm}$$

$$\text{aire du } \triangle ABC = \frac{5 \cdot c}{2} \simeq 17,85 \text{ cm}^2$$