

7.13 $AB = 22 \text{ mm}$, $AC = 32 \text{ mm}$, $AD = 19 \text{ mm}$, $BC = 19 \text{ mm}$, $BD = 38 \text{ mm}$, $CD = 34 \text{ mm}$

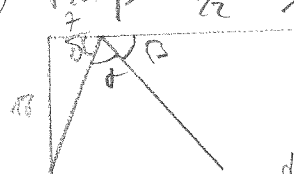
a) $\sin \alpha = \frac{34}{38} = \frac{17}{19}$ donc $\alpha = \text{Arcsin}\left(\frac{17}{19}\right) \approx 63,5^\circ$ (sur la machine on
(et +) fait $17 \div 19 \Rightarrow$ puis $\boxed{\text{Inv}}$ $\boxed{\sin}$ pour avoir $\boxed{\sin^{-1}}$)

$\cos \alpha = \frac{19}{38} = \frac{1}{2}$ donc $\alpha = \text{Arccos}\left(\frac{1}{2}\right) \approx 61,7^\circ$ (" $\boxed{\cos^{-1}}$ ")

$\tan \alpha = \frac{34}{19} = \frac{17}{9,5}$ donc $\alpha = \text{Arctan}\left(\frac{17}{9,5}\right) \approx 62,1^\circ$ (" $\boxed{\tan^{-1}}$ ")

On mesure $\alpha \approx 61^\circ$

c) $\tan \beta = \frac{19}{22} = \frac{19}{22} \Rightarrow \beta = \text{Arctan}\left(\frac{19}{22}\right) \approx 39,7^\circ$ (36° mesuré)



$\tan \delta = \frac{19}{7} \Rightarrow \delta = \text{Arctan}\left(\frac{19}{7}\right) \approx 68,7^\circ$

ainsi $\gamma = 180^\circ - \delta - \beta = 180^\circ - 68,7^\circ - 39,7^\circ = 71,6^\circ$ (mesuré 70°)

d) conclusion les mesures manquent de précision...

7.14 1) $\alpha = 19^\circ$ donc $\sin(19^\circ) = 0,33$, $\cos(19^\circ) = 0,95$ et $\tan(19^\circ) = 0,34$

2) $\sin \alpha = 0,125 \Rightarrow \alpha = \text{Arcsin}(0,125) \approx 7,18^\circ \Rightarrow \cos(7,18^\circ) = 0,99$ et $\tan(7,18^\circ) = 0,13$

3) $\cos(\alpha) = 0,4 \Rightarrow \alpha = \text{Arccos}(0,4) \approx 66,42^\circ \Rightarrow \sin(66,42^\circ) = 0,92$ et $\tan(66,42^\circ) = 2,29$

4) $\tan(\alpha) = 2 \Rightarrow \alpha = \text{Arctan}(2) = 63,43^\circ \Rightarrow \sin(63,43^\circ) = 0,89$ et $\cos(63,43^\circ) = 0,45$

7.15 a) $\sin(27^\circ) = \frac{3}{x} \Leftrightarrow \frac{\sin(27^\circ)}{1} = \frac{3}{x} \xrightarrow{\text{règle de trois}} x = \frac{1,3}{\sin(27^\circ)} \approx 6,61$

b) $\tan(x) = \frac{6}{5}$ donc $x = \text{Arctan}\left(\frac{6}{5}\right) \approx 57,99^\circ$

c) $\cos(79,5^\circ) = \frac{a}{7} \mid \cdot 7 \Leftrightarrow 9,05(19259) = a \Rightarrow a = 1,28$

d) $\cos(\alpha) = \sin(50^\circ) = 0,766 \dots \Rightarrow \alpha = \text{Arccos}(0,766 \dots) \approx 40^\circ$

Remarque  $\sin(\alpha) = \cos(\beta)$ et $\cos(\alpha) = \sin(\beta)$

e) $\tan(24^\circ) + \tan(x) = 1,35 \mid - \tan(24^\circ)$

$\tan(x) = 1,35 - \tan(24^\circ) = 0,9042 \dots \Rightarrow x = \text{Arctan}(0,9 \dots) \approx 42,94^\circ$

7.16 a) $\cos(36^\circ) = \frac{36}{x} \Rightarrow x = \frac{36}{\cos(36^\circ)} \approx 43,62$

b) $\tan(\alpha) = \frac{56}{20} \Rightarrow \alpha = \text{Arctan}\left(\frac{56}{20}\right) = 70,35^\circ$