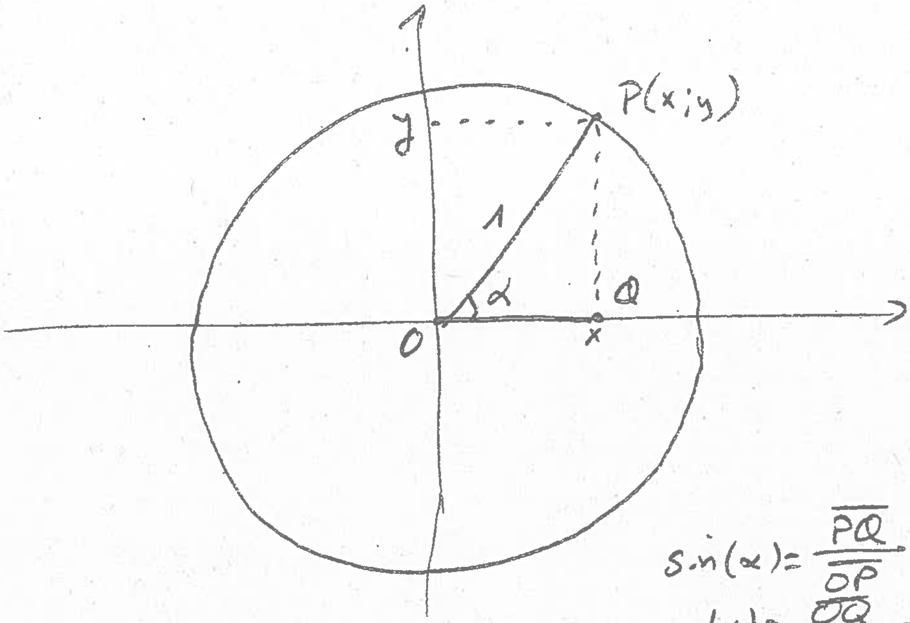
[Act 6]

[1]
[2]
[3]

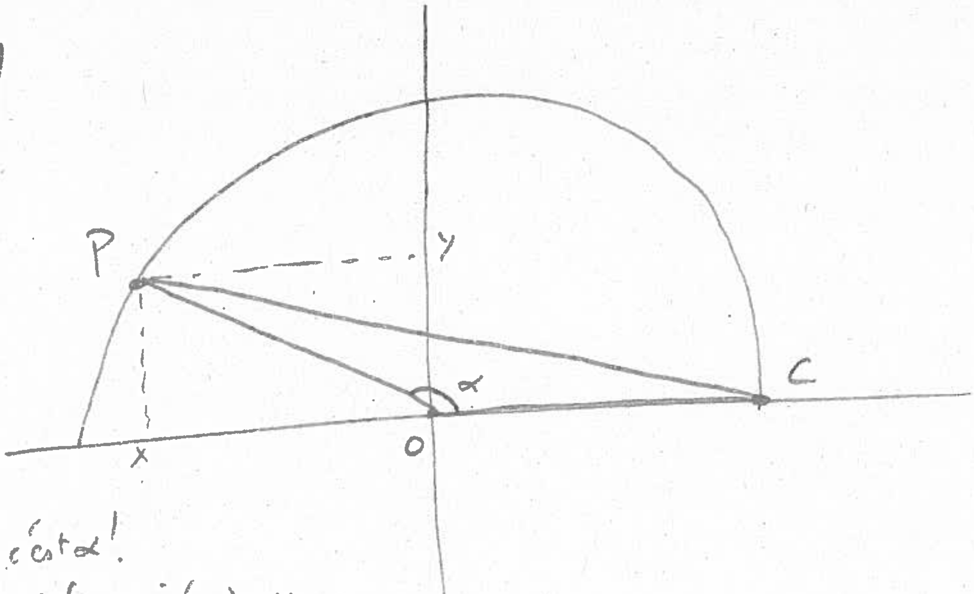


$\sin(\alpha) = \frac{\overline{PQ}}{\overline{OP}} = \frac{y}{1} = y$

$\cos(\alpha) = \frac{\overline{OQ}}{\overline{OP}} = \frac{x}{1} = x$

[Act 7]

[1]
[2]



[3] c'est α !

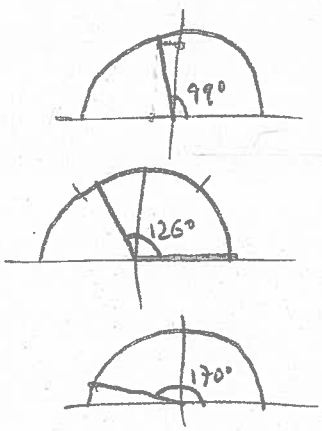
[4] déf : $\sin(\alpha) = y$
$\cos(\alpha) = x$

[Act 8]

[1] a) $\sin(99°) \simeq 0{,}987688\ldots$
$\cos(99°) \simeq -0{,}156434\ldots$

b) $\sin(126°) \simeq 0{,}8090169\ldots$
$\cos(126°) \simeq -0{,}587785\ldots$

c) $\sin(170°) \simeq 0{,}173648\ldots$
$\cos(170°) \simeq -0{,}98480777\ldots$



[2]

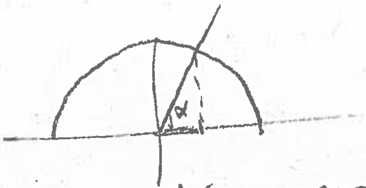
$\sin(120) = \sin(60) = \sqrt{3}/2$
$\cos(120) = -\sin(60) = \sqrt{3}/2$

$\sin(150) = \sin(30) = \sqrt{2}/2$
$\cos(150) = -\cos(30) = -\sqrt{3}/2$

$\sin(90) = 1$
$\cos(90) = 0$

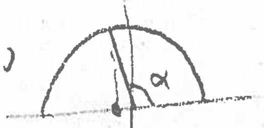
[Act 9]

[1] (a)



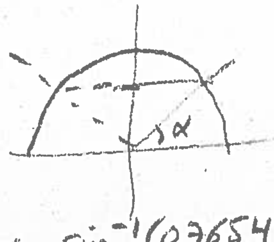
$\alpha = \cos^{-1}(0{,}45673)$
$\cong 62{,}8°$

(b)



$\alpha = \cos^{-1}(-0{,}0234)$
$\alpha \cong 91{,}3$

(c)

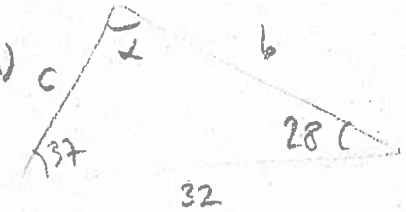


$\alpha = \sin^{-1}(0{,}76543)$
$\cong 49{,}9°$
Mais aussi!
$\alpha \cong 180 - 49{,}9°$
$\cong 130{,}1°$ ⚠

[2] ⚠ à la calc. ...

[Act 10]

[1] (a)



- $\alpha = 180 - 37 - 28 = 115$
- $\dfrac{\sin(115)}{32} = \dfrac{\sin(28)}{c} = \dfrac{\sin(37)}{b}$

$c = \dfrac{32\sin(28)}{\sin(115)} \cong 16{,}6$

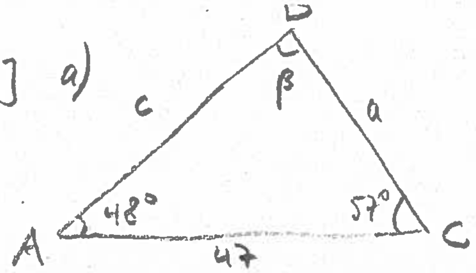
$b = \dfrac{32\sin(37)}{\sin(115)} \cong 21{,}2$

(b) cf fiche

[2] (a) c avec thm du sinus
$b^2 = a^2 + c^2 - 2ac\cos(\beta) = 32^2 + (16{,}6)^2 - 2\cdot 32\cdot 16{,}6\cos(37) \cong 451{,}0$
$b \cong 21{,}2$

(b) cf. fiche

[3] a)



1] schéma

2] analyser : A-C-A ⇒ sol unique

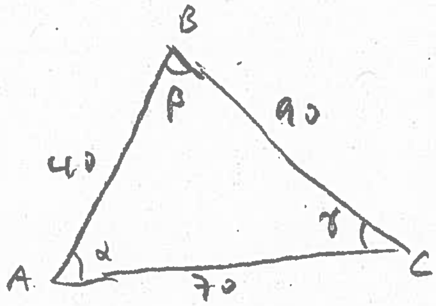
$\beta = 180 - 48 - 57 = 75°$ ⇒ pas de pb avec $\sin^{-1}$

3] résoudre

- $\dfrac{\sin(\beta)}{47} = \dfrac{\sin(48)}{a} = \dfrac{\sin(57)}{c}$

$a = \dfrac{47\sin(48)}{\sin(75)} \cong 36,16$ $\qquad c = \dfrac{47\sin(57)}{\sin(75)} \cong 4$

b)



C-C-C : sol unique

- $a^2 = b^2 + c^2 - 2bc\cos(\alpha)$

$90^2 = 70^2 + 40^2 - 2\cdot 70\cdot 40\cos(\alpha)$

$\alpha = \cos^{-1}\left[\dfrac{90^2 - 70^2 - 40^2}{-2\cdot 70\cdot 40}\right] \cong 106,6°$ [stocke

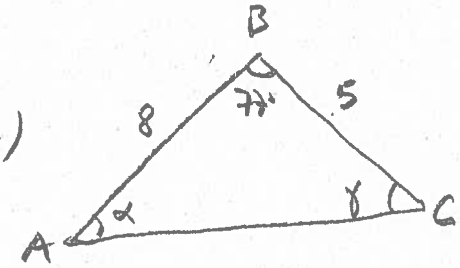
- pas d'autre angle > 90, donc $\sin^{-1}$ ok !

$\dfrac{\sin(\beta)}{b} = \dfrac{\sin(\gamma)}{c} = \dfrac{\sin(\alpha)}{a}$

$\sin(\beta) = \dfrac{70\cdot\sin(106,6)}{90} \Rightarrow \beta \cong 48,2°$

- $\gamma \cong 180 - 106,6 - 48,2 = 25,2°$

c)



- C-A-C : sol unique

on préfère éviter $\sin^{-1}$...

- $b^2 = 8^2 + 5^2 - 2\cdot 8\cdot 5\cos(77) \cong 71$ [stocker]

$b \cong 8,43$

- $5^2 = 8^2 + 8,43^2 - 2\cdot 8\cdot 8,43\cos(\alpha)$

$\alpha = \cos^{-1}\left(\dfrac{5^2 - 8^2 - 8,43^2}{-2\cdot 8\cdot 8,43}\right) \cong \cos^{-1}(0,81556877...)$

$\cong 35,4°$

- $\gamma = 180 - \alpha - \beta = 67,6°$