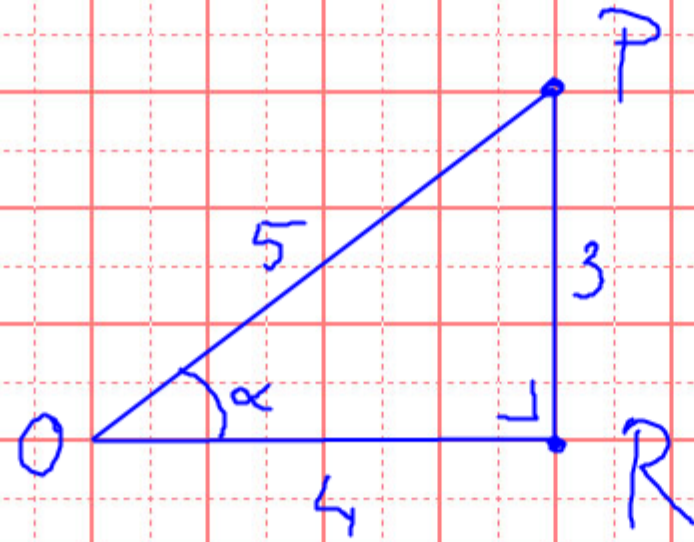




In een rechthoekige driehoek is  $\angle O$   
scherp ( $< 90^\circ$ )

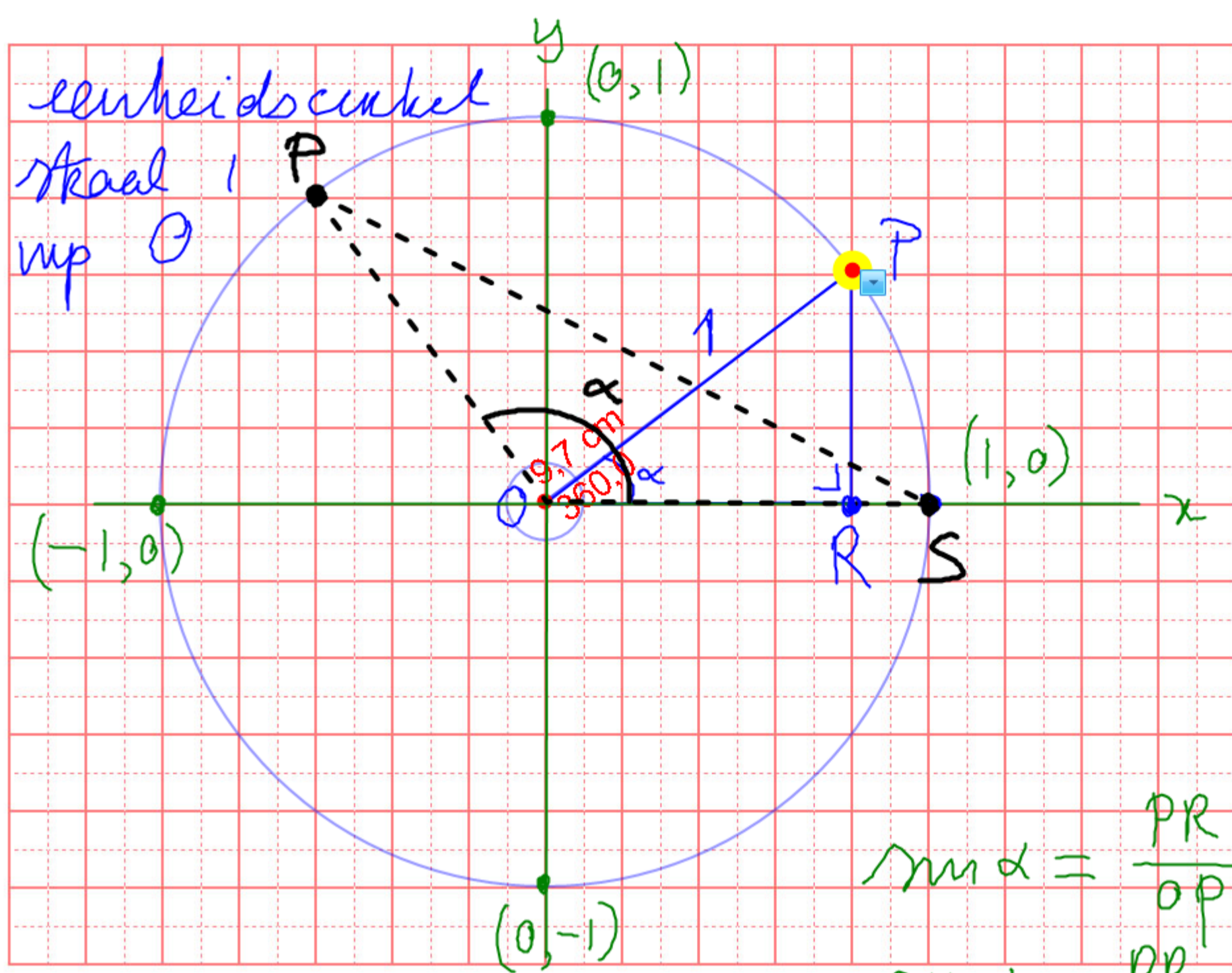


SOS CASTOA

$$\sin \alpha = \frac{3}{5}$$
$$\alpha = 37^\circ$$

$$\cos \alpha = \frac{4}{5}$$
$$\alpha = 37^\circ$$

$$\tan \alpha = \frac{3}{4}$$
$$\alpha = 37^\circ$$



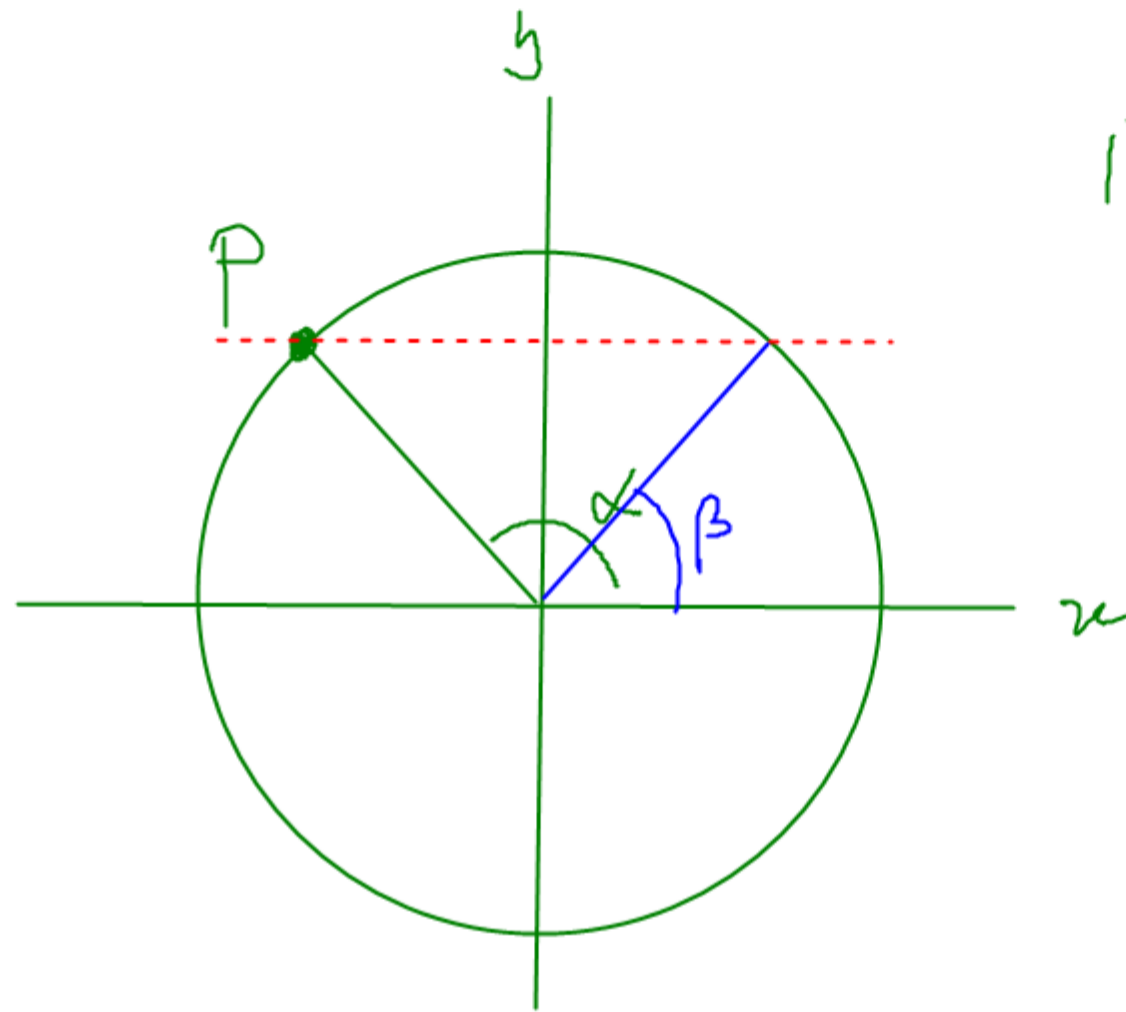
△ OSP is Monophoetis

daar werkt SOSCASTOA dus niet

toch willen we haeken (en zydien) berekenen

Er is een verband tussen

de  $y$ -coördinaat van punt  $P$  op de eenheidscirkel en de middelpuntshoek  $\alpha$



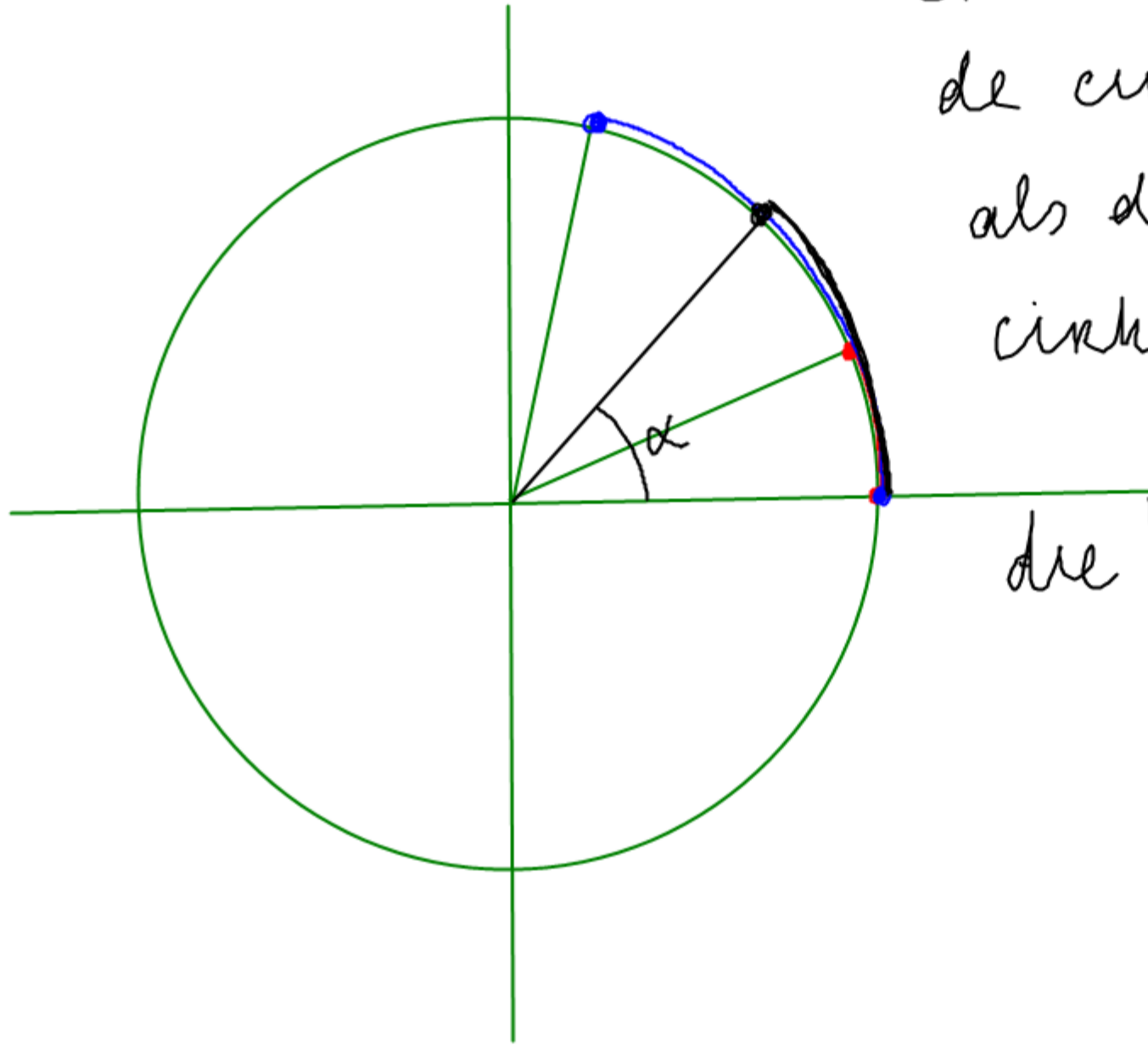
Ik lees af  $y_p = 0,7$

dan is  $\alpha = 136^\circ$

$\beta = 44^\circ$

ma	30-5	6-6 8.3	<del>13-6</del>	20-6	8.6
di	31-5 8.2	7-6 8.4	14-6 vndgh	21-6	8.7
wo	<del>1-6</del>	8-6 vndgh	15-6 so vndgh	22-6	ingezenuk
wo	<del>1-6</del>	8-6 vndgh	15-6 8.5	22-6	even h7/h8
			17-6 Inhalen test		<u>F, S</u>
			Inhalen so		

testweek h7 h8  
vndgh blok 1 + 4



Er is een hoek waarbij  
de cirkelboog even groot  
als de straal van de  
cirkel

die hoek is 1 radiaal groot

Arcuel	hoek (rad)	cirkelboogje
1	1	1
1	2	2
1	3	3
1	6	6
2	1	2
2	3	6
3	$2\pi$	hele cirkel $2\pi \cdot 3 = 6\pi$

Kad	$2\pi$	$\pi$	$\frac{1}{3}\pi$	$\frac{1}{4}\pi$	$\frac{1}{6}\pi$	$\frac{1}{2}\pi$
grader	$360^\circ$	$180^\circ$	$60^\circ$	$45^\circ$	$30^\circ$	$90^\circ$

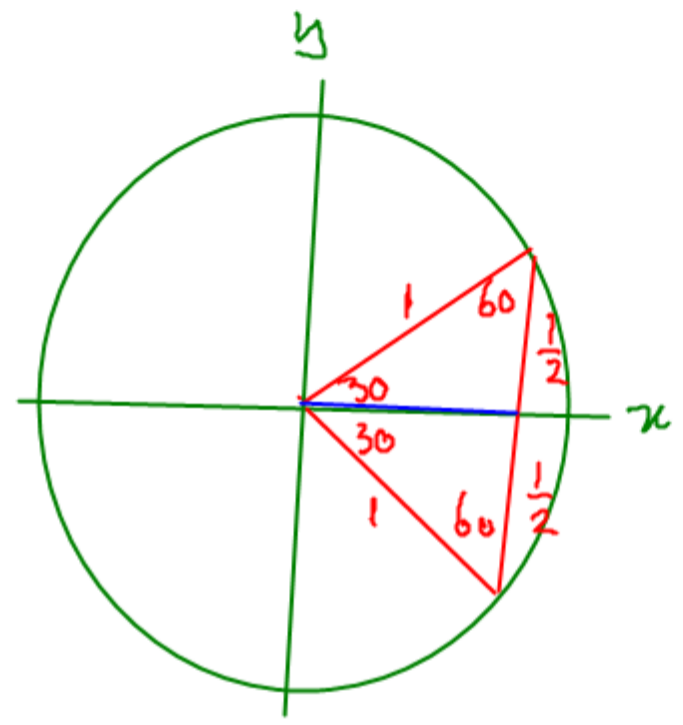
$\begin{matrix} \text{:3} \\ \curvearrowright \end{matrix}$   
 $\begin{matrix} \curvearrowleft \\ \text{:3} \end{matrix}$

Kad	$\frac{1}{9}\pi$
grader	$20^\circ$

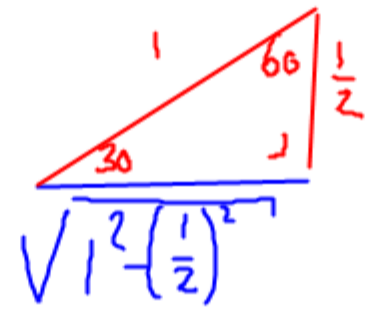
8

$\frac{1}{2}\sqrt{0}$   $\frac{1}{2}\sqrt{1}$   $\frac{1}{2}\sqrt{2}$   $\frac{1}{2}\sqrt{3}$   $\frac{1}{2}\sqrt{4}$  e zels benutzerijze

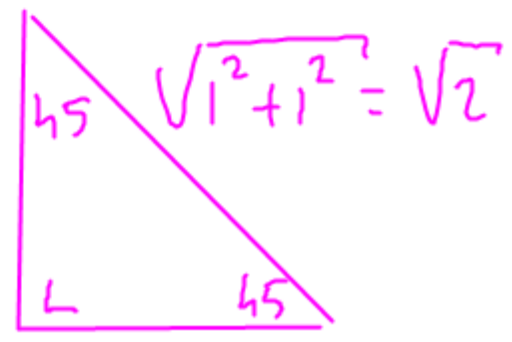
$\alpha^\circ$	0	30	45	60	90	120	135	150	180	210	225
$\alpha^{\text{rad}}$	0	$\frac{1}{6}\pi$	$\frac{1}{4}\pi$	$\frac{1}{3}\pi$	$\frac{1}{2}\pi$	$\frac{2}{3}\pi$	$\frac{3}{4}\pi$	$\frac{5}{6}\pi$	$\pi$	.	'
$\sin \alpha$	0	$\frac{1}{2}$	$\frac{1}{2}\sqrt{2}$	$\frac{1}{2}\sqrt{3}$	1	$\frac{1}{2}\sqrt{3}$	$\frac{1}{2}\sqrt{2}$	$\frac{1}{2}$	0		
$\cos \alpha$	1	$\frac{1}{2}\sqrt{3}$	$\frac{1}{2}\sqrt{2}$	$\frac{1}{2}$	0	$-\frac{1}{2}$	$-\frac{1}{2}\sqrt{2}$	$-\frac{1}{2}\sqrt{3}$	-1		



gelykzijdig



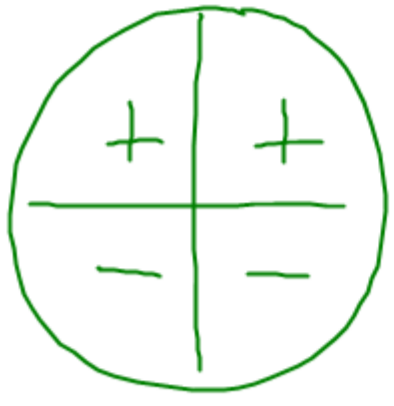
$$\sqrt{\frac{3}{4}} = \frac{\sqrt{3}}{\sqrt{4}} = \frac{\sqrt{3}}{2} = \frac{1}{2}\sqrt{3}$$



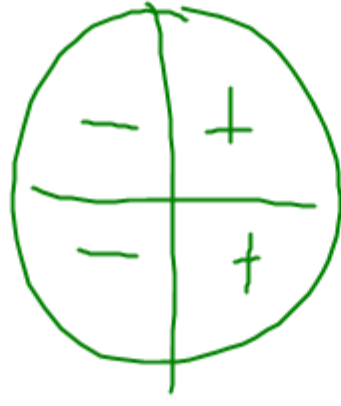
$$\sin 45^\circ = \frac{1}{\sqrt{2}}$$

$$\frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2} = \frac{1}{2}\sqrt{2}$$

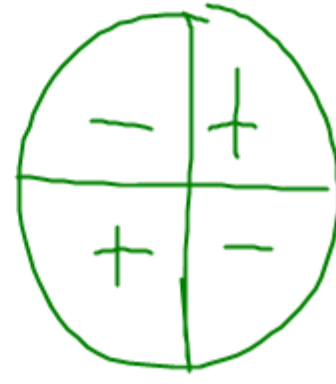
$\sin \alpha$



$\cos \alpha$



$$\tan \alpha = \frac{\sin \alpha}{\cos \alpha}$$



17    a     $\sin x = 0,1$

0,1 met in de tabel  
dus oplossen met GRM

$$y_1 = \sin(x)$$

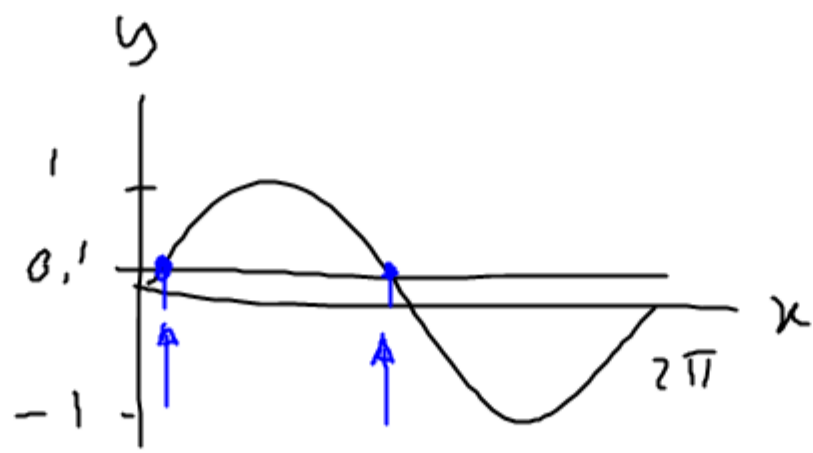
$$y_2 = 0,1$$

$$x_{\min} = 0$$

$$x_{\max} = 2\pi$$

$$y_{\min} = -1$$

$$y_{\max} = 1$$



calc minn intersect geeft  $x = \dots \vee x = \dots$

a  $\sin x = 0,1$

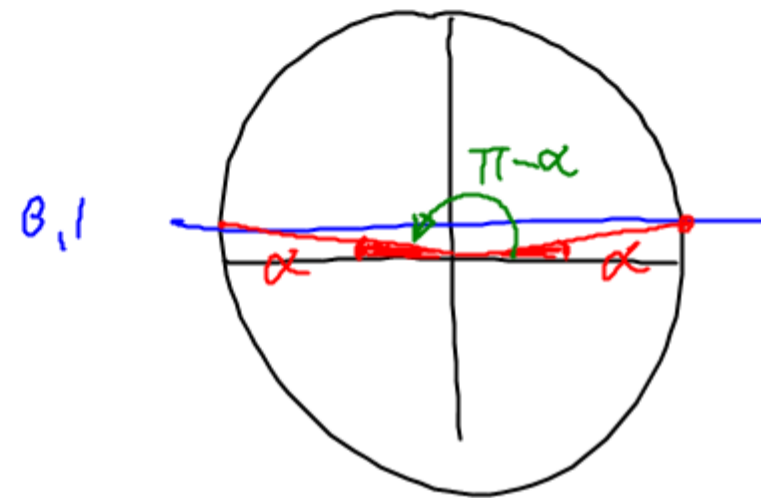
$x = 0,1002$

met  $\sin^{-1}(0,1)$

dit is maar 1 antwoord  
terwijl er 2 zijn!

$\vee x = \pi - 0,1002$

$x = 3,04$



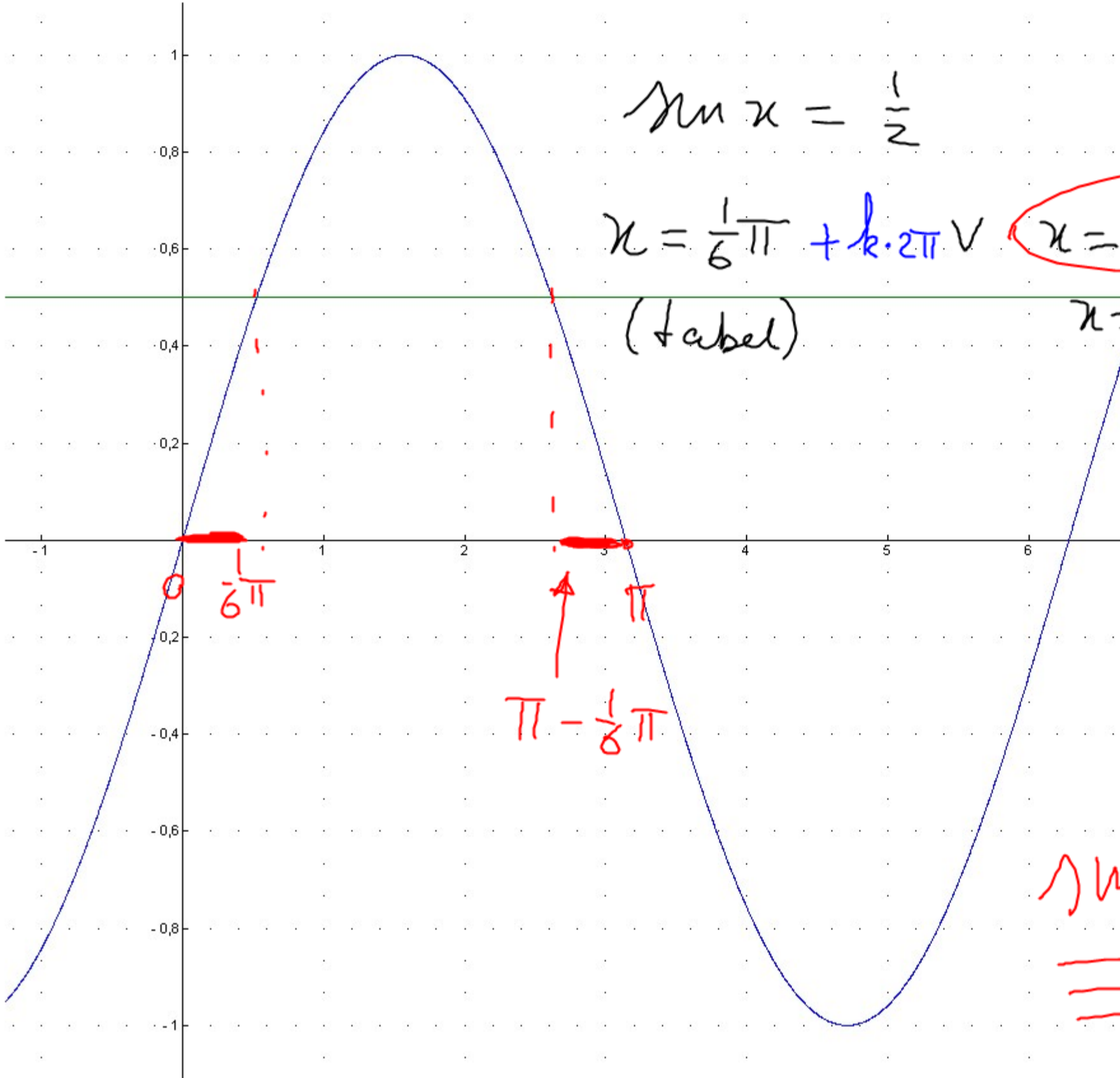
$\sin \alpha = \sin(\pi - \alpha)$

$$\sin x = \frac{1}{2}$$

$$x = \frac{1}{6}\pi + k \cdot 2\pi \vee x = \pi - \frac{1}{6}\pi + k \cdot 2\pi$$

(tabel)

$$x = \frac{5}{6}\pi + k \cdot 2\pi$$



$$\sin \alpha = \sin(\pi - \alpha)$$

=====

8 4

$$\sin x = -0,1$$

$$y_1 = \sin(x)$$

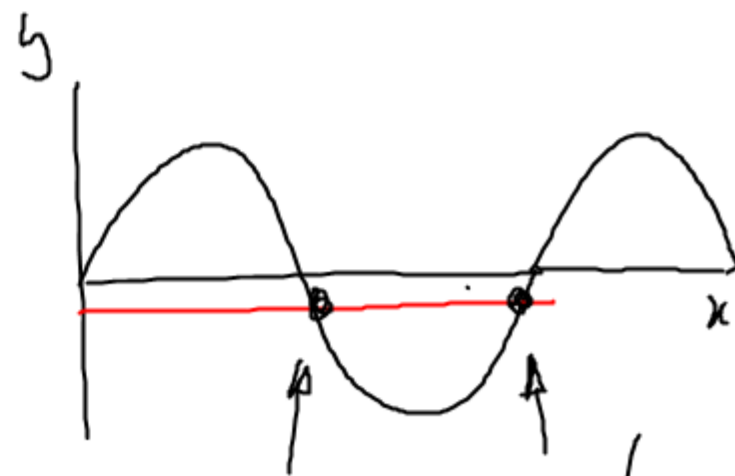
$$y_2 = -0,1$$

$$x_{\min} = 0$$

$$x_{\max} = 3\pi$$

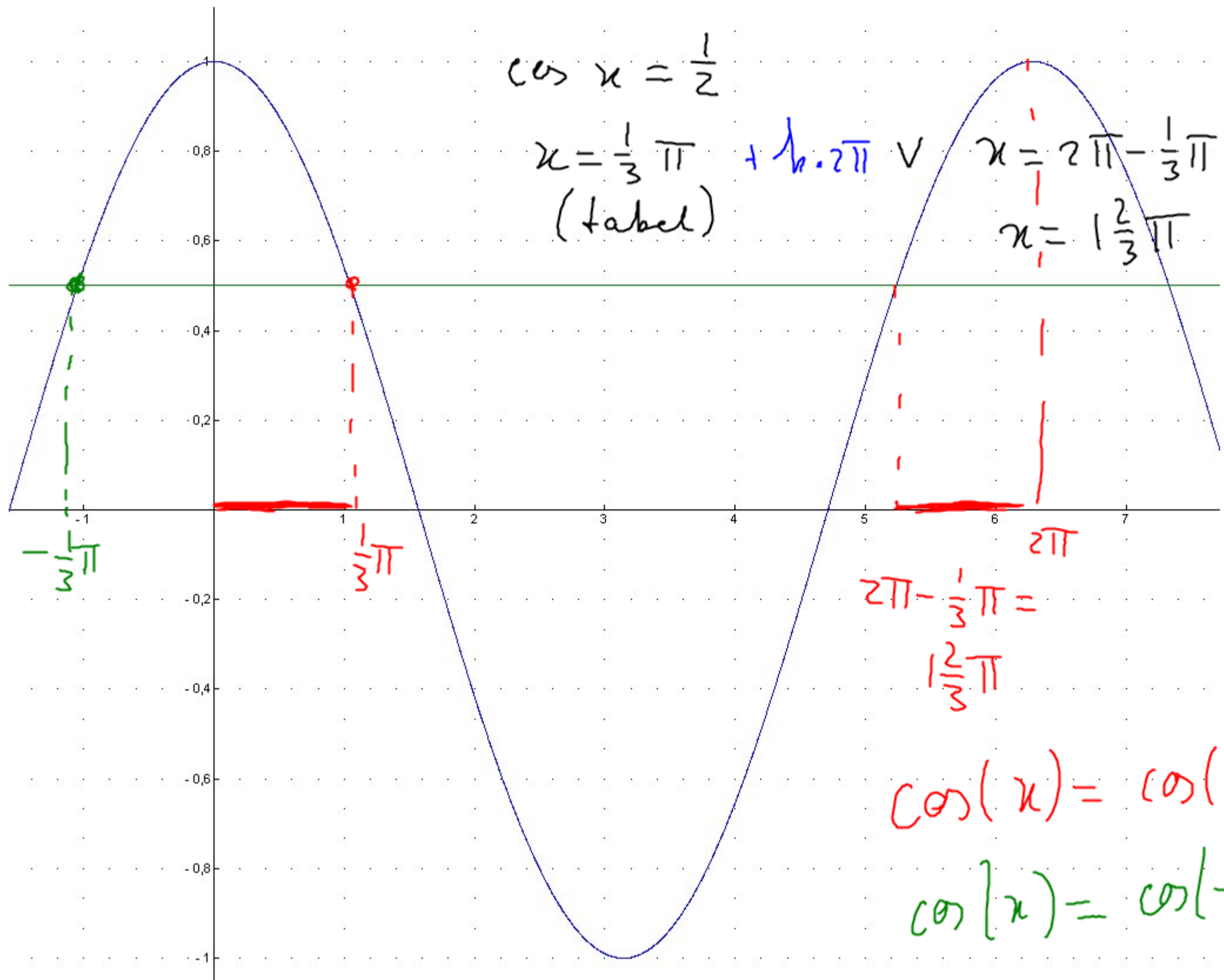
$$y_{\min} = -2$$

$$y_{\max} = 2$$



calc memu intersect geef  $x = 3,24$   $x = 6,8$

$3,24 + 2\pi$	$6,8 + 2\pi$
$3,24 + 4\pi$	$6,8 + 4\pi$
$3,24 + 6\pi$	$6,8 + 4\pi$



$$\cos x = \frac{1}{2}$$

$$x = \frac{1}{3}\pi + k \cdot 2\pi \quad \vee$$

(label)

$$x = 2\pi - \frac{1}{3}\pi + k \cdot 2\pi$$

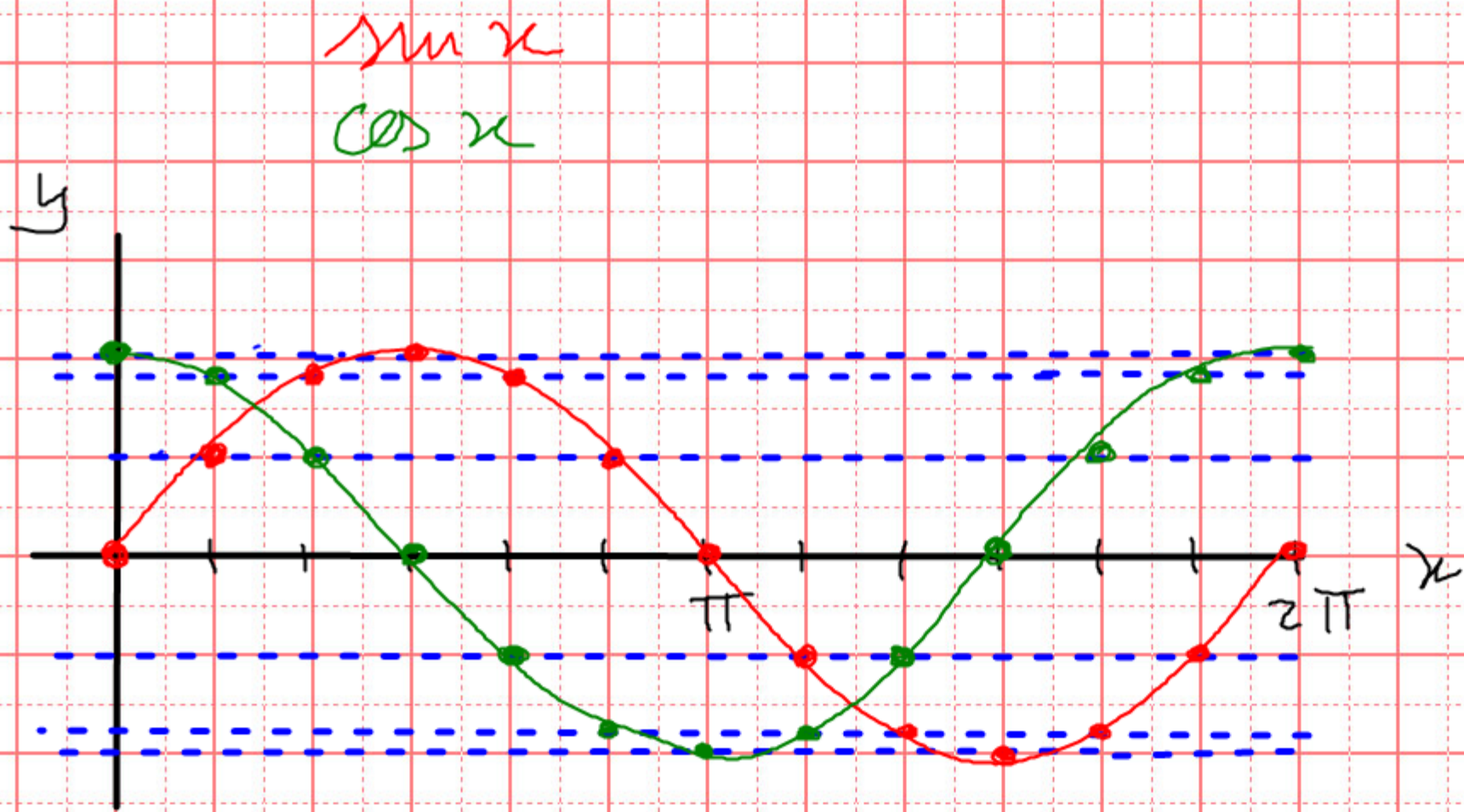
$$x = \frac{2}{3}\pi + k \cdot 2\pi$$

$$2\pi - \frac{1}{3}\pi =$$

$$\frac{12}{3}\pi$$

$$\cos(x) = \cos(2\pi - x)$$

$$\cos(x) = \cos(-x)$$



half - bijna boven - boven

tabel

$$1 \quad \frac{1}{2}\sqrt{3}$$

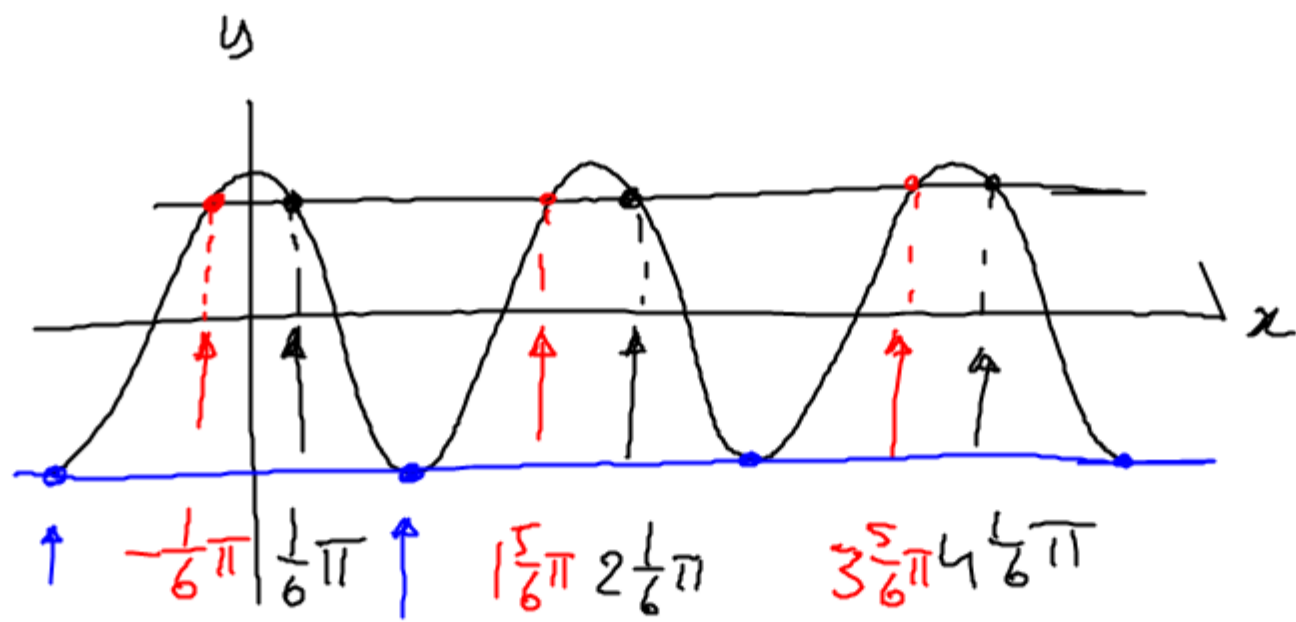
$$\frac{1}{2}$$

$$0$$

$$-\frac{1}{2}$$

$$-1 \quad -\frac{1}{2}\sqrt{3}$$

26  
a, b



c

$$\cos x = -1$$

$$x = \pi \quad \vee \quad x = -\pi$$

$$x = 3\pi$$

$$x = 5\pi$$

30 b

$g$

$$\begin{array}{ll} \text{amplitude} & 3 \\ \text{period} & \pi \end{array} \quad \begin{array}{l} a=3 \\ b = \frac{2\pi}{\pi} = 2 \end{array}$$

$$g(x) = a \cdot \sin(bx)$$

$$g(x) = 3 \sin(2x)$$

25

$$\cos x = 0,67$$

$$y_1 = \cos(x)$$

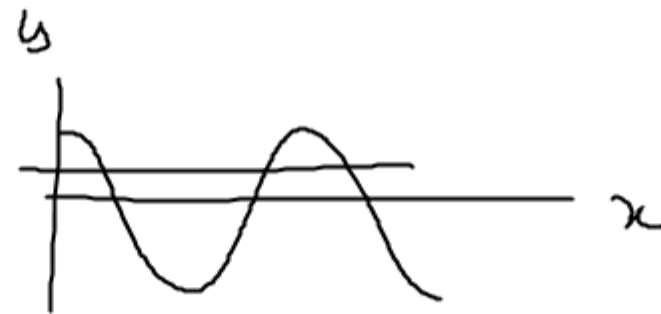
$$y_2 = 0,67$$

$$x_{\min} \quad 0$$

$$x_{\max} \quad 3\pi$$

$$y_{\min} \quad -2$$

$$y_{\max} \quad :$$



calc menu intersect geeft



amplitude van  $\sin x$  is 1

van  $2 \sin x$  is 2

van  $\frac{1}{3} \sin x$  is  $\frac{1}{3}$

algemeen: amplitude van  $a \cdot \sin x$  is  $a$