

Sin(H)=a en Cos(H)=a oplossen

```
# Los de goniometrische vergelijking op.  
from math import sin, pi, asin, radians, degrees, sqrt, cos, acos  
print('Los op: sin(H)=a of cos(H)=a.')  
print()  
a=eval(input('a= '))  
a_abs=abs(a)  
  
# haal onmogelijke invoer eruit  
if a_abs>1:  
    print('De waarde van a moet')  
    print('tussen -1 en 1 liggen.')  
  
else:  
    print()  
    print('sin(H)=a , kies K=1')  
    print('cos(H)=a , kies K=2')  
    print()  
    k=eval(input('k='))  
  
    if k==1:  
        opl_1s=asin(a) #dit geeft oplossing in radialen  
        opl_12s=(pi-opl_1s) #Sinus: tweede oplossing  
        opl_1spi=opl_1s/pi #Omzetting naar pi-radialen  
        opl_12spi=opl_12s/pi  
  
        opl_2s=degrees(opl_1s) #omzetting naar graden  
        opl_21s=degrees(opl_12s)  
        print()  
        print('sin(H)=',a,' geeft:')  
        print('H={:.1f} graden of H={:.1f} graden,.format(opl_2s, opl_21s))  
        print('of H={:.2f} pi of H={:.2f} pi.'.format(opl_1spi, opl_12spi))  
  
    elif k==2:  
        opl_1c=acos(a) #Oplossing in radialen  
        opl_12c=(2*pi-opl_1c) #2-e oplossing cosinus  
        opl_1cpi=opl_1c/pi #omzetting naar pi-radialen  
        opl_12cpi=opl_12c/pi  
  
        opl_2c=degrees(opl_1c) #omzetting naar graden  
        opl_21c=degrees(opl_12c)  
        print()  
        print('cos(H)=',a,' geeft:')  
        print('H={:.1f} graden of H={:.1f} graden,.format(opl_2c, opl_21c))  
        print('of H={:.2f} pi of H={:.2f} pi.'.format(opl_1cpi, opl_12cpi))  
  
    elif k!=1 or k!=2:  
        print('Maak een juiste keuze.')
```

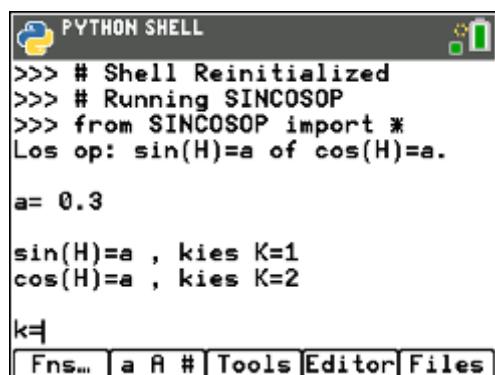
Voorbeeld:

<p>Los op: $\sin(H)=a$ of $\cos(H)=a$.</p> <p>$a= 0.5$</p> <p>$\sin(H)=a$, kies K=1 $\cos(H)=a$, kies K=2</p> <p>k=1</p> <p>$\sin(H)= 0.5$ geeft: $H=30.0$ graden of $H=150.0$ graden, of $H=0.17$ pi of $H=0.83$ pi.</p>	<p>Los op: $\sin(H)=a$ of $\cos(H)=a$.</p> <p>$a= 0.5$</p> <p>$\sin(H)=a$, kies K=1 $\cos(H)=a$, kies K=2</p> <p>k=2</p> <p>$\cos(H)= 0.5$ geeft: $H=60.0$ graden of $H=300.0$ graden, of $H=0.33$ pi of $H=1.67$ pi.</p>
<p>Los op: $\sin(H)=a$ of $\cos(H)=a$.</p> <p>$a= -0.2$</p> <p>$\sin(H)=a$, kies K=1 $\cos(H)=a$, kies K=2</p> <p>k=1</p> <p>$\sin(H)= -0.2$ geeft: $H=-11.5$ graden of $H=191.5$ graden, of $H=-0.06$ pi of $H=1.06$ pi.</p>	<p>Los op: $\sin(H)=a$ of $\cos(H)=a$.</p> <p>$a= -0.2$</p> <p>$\sin(H)=a$, kies K=1 $\cos(H)=a$, kies K=2</p> <p>k=2</p> <p>$\cos(H)= -0.2$ geeft: $H=101.5$ graden of $H=258.5$ graden, of $H=0.56$ pi of $H=1.44$ pi.</p>
<p>Los op: $\sin(H)=a$ of $\cos(H)=a$.</p> <p>$a= 1$</p> <p>$\sin(H)=a$, kies K=1 $\cos(H)=a$, kies K=2</p> <p>k=1</p> <p>$\sin(H)= 1$ geeft: $H=90.0$ graden of $H=90.0$ graden, of $H=0.50$ pi of $H=0.50$ pi.</p>	<p>Los op: $\sin(H)=a$ of $\cos(H)=a$.</p> <p>$a= 1$</p> <p>$\sin(H)=a$, kies K=1 $\cos(H)=a$, kies K=2</p> <p>k=2</p> <p>$\cos(H)= 1$ geeft: $H=0.0$ graden of $H=360.0$ graden, of $H=0.00$ pi of $H=2.00$ pi.</p>

Foutmeldingen

Los op: $\sin(H)=a$ of $\cos(H)=a$. a= 0.5 $\sin(H)=a$, kies K=1 $\cos(H)=a$, kies K=2 k=5 Maak een juiste keuze.	Los op: $\sin(H)=a$ of $\cos(H)=a$. a= 2 De waarde van a moet tussen -1 en 1 liggen.
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TI84-Python:

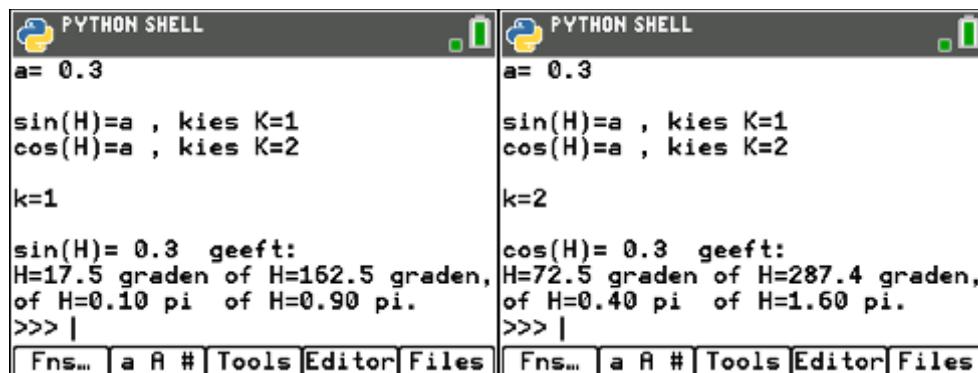


```
PYTHON SHELL
>>> # Shell Reinitialized
>>> # Running SINCOSOP
>>> from SINCOSOP import *
Los op: sin(H)=a of cos(H)=a.

a= 0.3

sin(H)=a , kies K=1
cos(H)=a , kies K=2

k=
```



```
PYTHON SHELL
a= 0.3

sin(H)=a , kies K=1
cos(H)=a , kies K=2

k=1

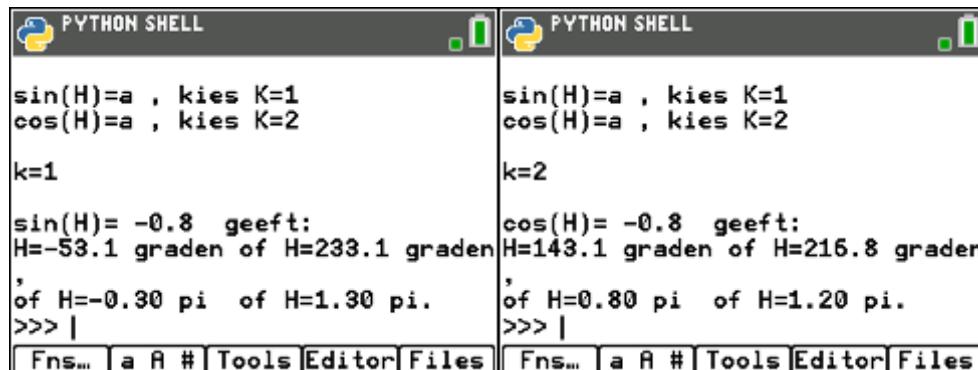
sin(H)= 0.3 geeft:
H=17.5 graden of H=162.5 graden,
of H=0.10 pi of H=0.90 pi.
>>> |
```

```
PYTHON SHELL
a= 0.3

sin(H)=a , kies K=1
cos(H)=a , kies K=2

k=2

cos(H)= 0.3 geeft:
H=72.5 graden of H=287.4 graden,
of H=0.40 pi of H=1.60 pi.
>>> |
```



```
PYTHON SHELL
sin(H)=a , kies K=1
cos(H)=a , kies K=2

k=1

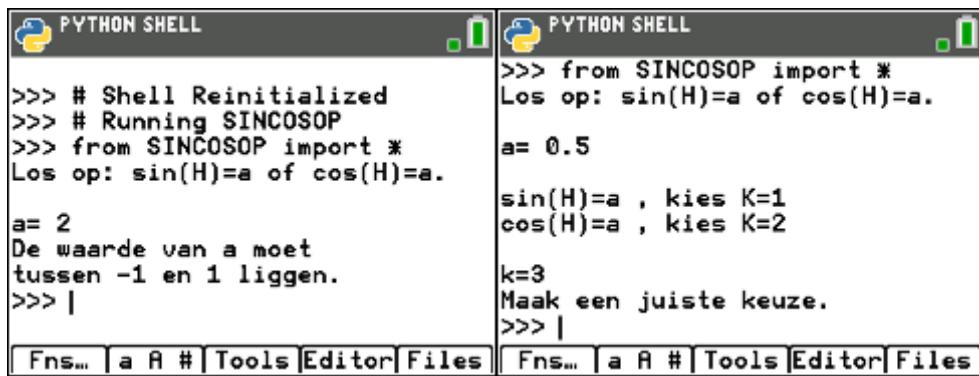
sin(H)= -0.8 geeft:
H=-53.1 graden of H=233.1 graden
, of H=-0.30 pi of H=1.30 pi.
>>> |
```

```
PYTHON SHELL
sin(H)=a , kies K=1
cos(H)=a , kies K=2

k=2

cos(H)= -0.8 geeft:
H=143.1 graden of H=216.8 graden
, of H=0.80 pi of H=1.20 pi.
>>> |
```

Python
Wiskunde



The image shows two adjacent windows of a Python shell interface. Both windows have a title bar labeled "PYTHON SHELL" and a menu bar at the bottom with items: Fns..., a A #, Tools, Editor, Files.

Left Window Content:

```
>>> # Shell Reinitialized
>>> # Running SINCOSOP
>>> from SINCOSOP import *
Los op: sin(H)=a of cos(H)=a.

a= 2
De waarde van a moet
tussen -1 en 1 liggen.
>>> |
```

Right Window Content:

```
>>> from SINCOSOP import *
Los op: sin(H)=a of cos(H)=a.

a= 0.5

sin(H)=a , kies K=1
cos(H)=a , kies K=2

k=3
Maak een juiste keuze.
>>> |
```