



INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

Číslo projektu : CZ.1.07/1.5.00/34.0556

Šablona : IV/2 = Inovace a zkvalitnění výuky směřující k rozvoji  
matematické gramotnosti žáků SŠ

Tematická oblast : Funkce, rovnice, nerovnice

Dílčí téma : Základní goniometrické rovnice

Test s řešením

VY \_ 42 \_ INOVACE \_ HZ \_ MA \_ 31

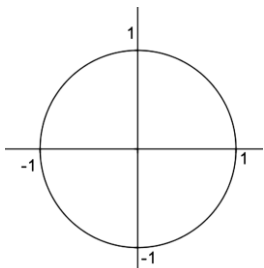
Autor : Mgr. Ivana Hanzíková

Škola : SPŠ a VOŠ Příbram

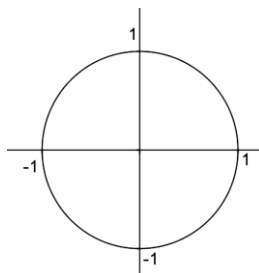
A)

Řešte graficky jednoduché goniometrické rovnice bez použití kalkulačtoru, výsledek запиšte ve stupních.

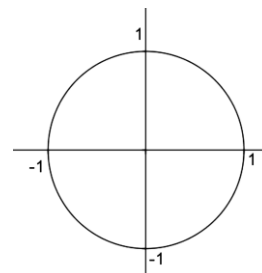
1)  $\sin x = \frac{\sqrt{3}}{2}$



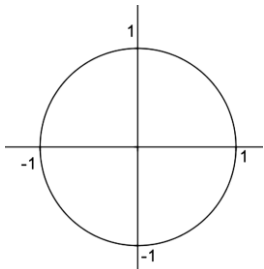
2)  $\cos x = \frac{1}{2}$



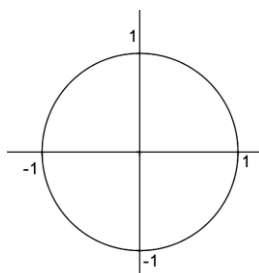
3)  $\operatorname{tg} x = -1$



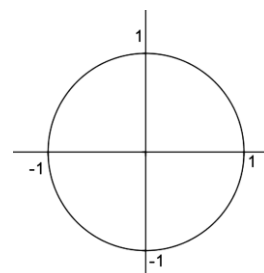
4)  $\sin x = -\frac{1}{2}$



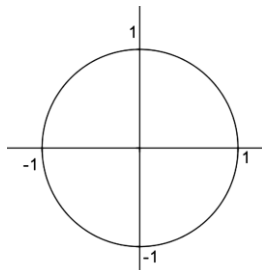
5)  $\operatorname{cotg} x = 0$



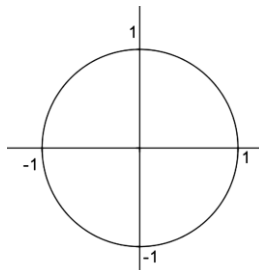
6)  $\sin x = 0$



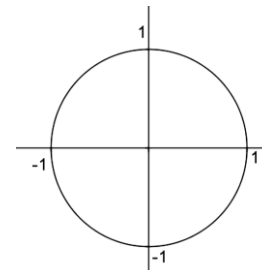
7)  $\cos x = -\frac{\sqrt{2}}{2}$



8)  $\operatorname{tg} x = -\frac{\sqrt{3}}{3}$



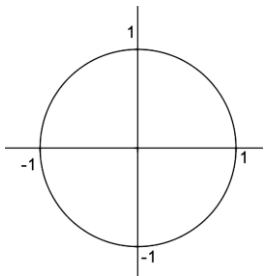
9)  $\cos x = -1$



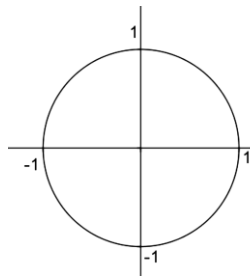
B)

Řešte graficky jednoduché goniometrické rovnice bez použití kalkulatoru, výsledek запиšte ve stupních.

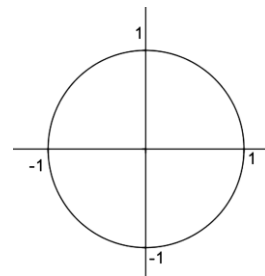
1)  $\cos x = \frac{\sqrt{3}}{2}$



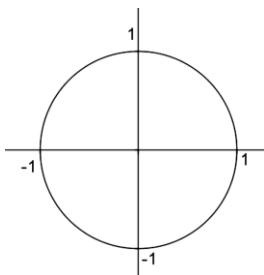
2)  $\sin x = \frac{1}{2}$



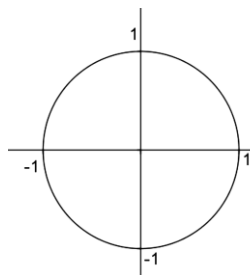
3)  $\cotg x = -1$



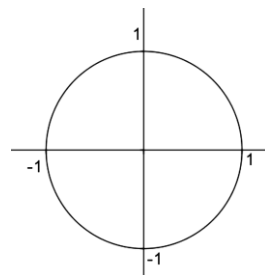
4)  $\cos x = -\frac{1}{2}$



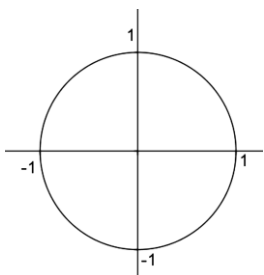
5)  $\operatorname{tg} x = -\sqrt{3}$



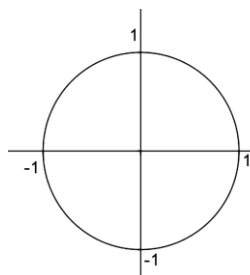
6)  $\cos x = 0$



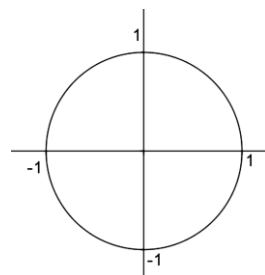
7)  $\sin x = -\frac{\sqrt{2}}{2}$



8)  $\operatorname{tg} x = -\frac{\sqrt{3}}{3}$

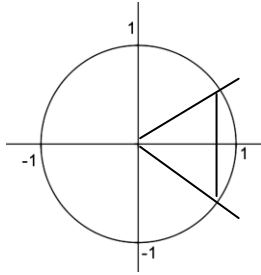


9)  $\sin x = -1$



## B) Řešení

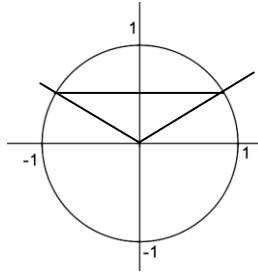
$$1) \cos x = \frac{\sqrt{3}}{2}$$



$$x_1 = 30^\circ + k 360^\circ$$

$$x_2 = 330^\circ + k 360^\circ$$

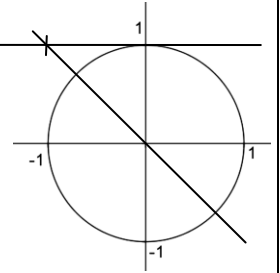
$$2) \sin x = \frac{1}{2}$$



$$x_1 = 30^\circ + k 360^\circ$$

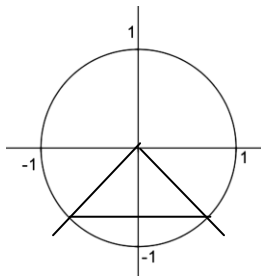
$$x_2 = 150^\circ + k 360^\circ$$

$$3) \cotg x = -1$$



$$x = 135^\circ + k 180^\circ$$

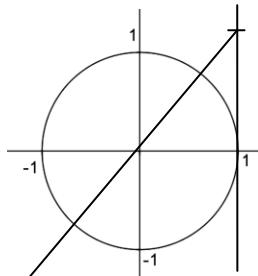
$$4) \cos x = -\frac{1}{2}$$



$$x_1 = 240^\circ + k 360^\circ$$

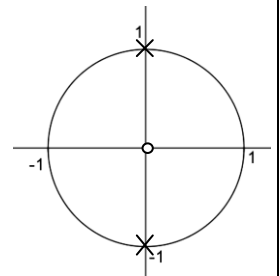
$$x_2 = 300^\circ + k 360^\circ$$

$$5) \operatorname{tg} x = \sqrt{3}$$



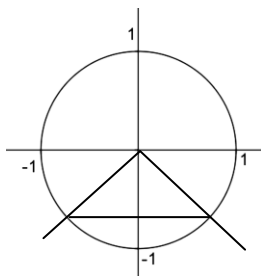
$$x = 60^\circ + k 180^\circ$$

$$6) \cos x = 0$$



$$x = 90^\circ + k 180^\circ$$

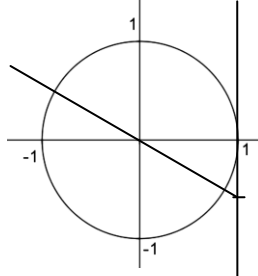
$$7) \sin x = -\frac{\sqrt{2}}{2}$$



$$x_1 = 225^\circ + k 360^\circ$$

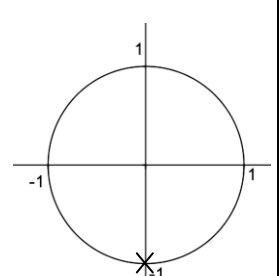
$$x_2 = 315^\circ + k 360^\circ$$

$$8) \operatorname{tg} x = -\frac{\sqrt{3}}{3}$$



$$x = 330^\circ + k 180^\circ$$

$$9) \sin x = -1$$

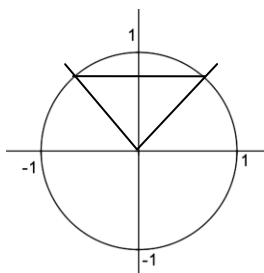


$$x = 270^\circ + k 360^\circ$$

# A)Řešení

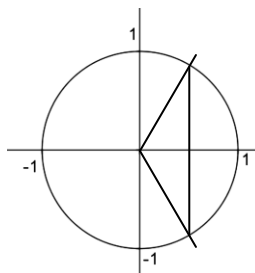
1)  $\sin x = \frac{\sqrt{3}}{2}$

$x_1 = 60^\circ + k 360^\circ$   
 $x_2 = 120^\circ + k 360^\circ$



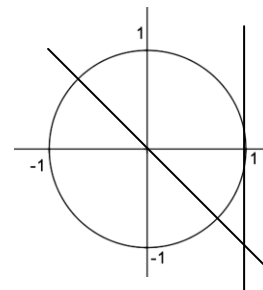
2)  $\cos x = \frac{1}{2}$

$x_1 = 60^\circ + k 360^\circ$   
 $x_2 = 300^\circ + k 360^\circ$



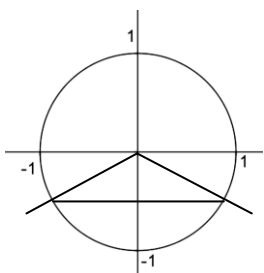
3)  $\text{tg } x = -1$

$x = 135^\circ + k 360^\circ$



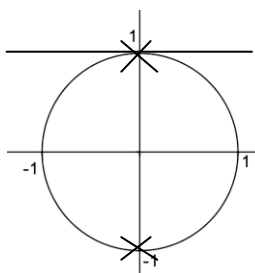
4)  $\sin x = -\frac{1}{2}$

$x_1 = 210^\circ + k 360^\circ$   
 $x_2 = 330^\circ + k 360^\circ$

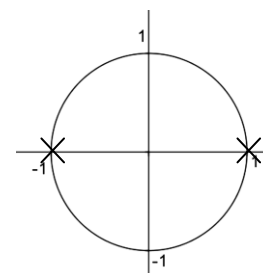


5)  $\text{cotg } x = 0$

$x = 90^\circ + k 180^\circ$

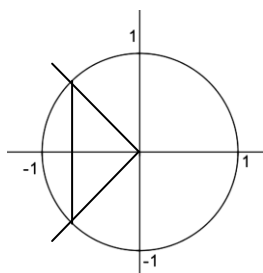


6)  $\sin x = 0$   
 $x = k 180^\circ$



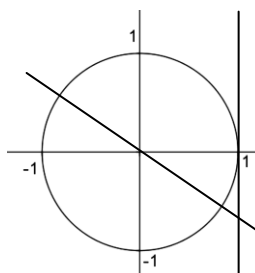
7)  $\cos x = -\frac{\sqrt{2}}{2}$

$x_1 = 135^\circ + k 360^\circ$   
 $x_2 = 225^\circ + k 360^\circ$



8)  $\text{tg } x = -\frac{\sqrt{3}}{3}$

$x_1 = 150^\circ + k 180^\circ$



9)  $\cos x = -1$

$x = 180^\circ + k 360^\circ$

