

Section 7.5: Solving Trig Equations

Monday, February 29, 2016
11:04 AM

solve: $2 \sin x + 1 = 0$

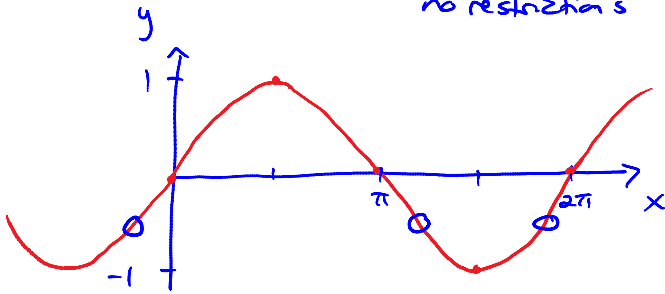
$$2 \sin x = -1$$

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

but $\sin x = -\frac{1}{2}$
no restrictions

is not the same as $x = \sin^{-1}\left(-\frac{1}{2}\right)$

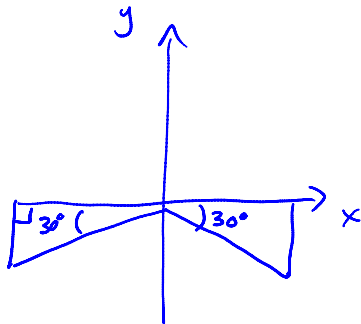
restricted to $[-90^\circ, 90^\circ]$



where is $\sin \theta$ negative? QIII and QIV

$$\sin^{-1}\left(-\frac{1}{2}\right) = -30^\circ$$

↖ QIV



$$\text{so } x = \begin{cases} -30^\circ \text{ or coterminal} \\ 210^\circ \text{ or coterminal} \end{cases}$$