

Solving Trig. Equations

$4x = -1$

Solve for θ in $0^\circ \leq \theta < 360^\circ$

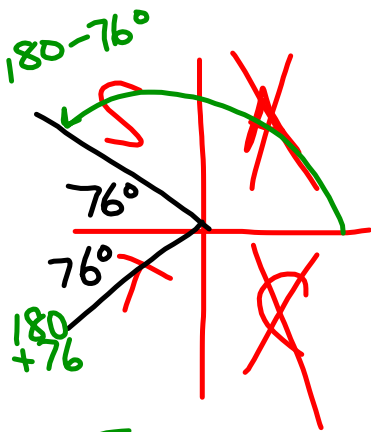
① $6\cos\theta - 3 = 2\cos\theta - 4$
 ~~$-2\cos\theta$~~ ~~$-2\cos\theta$~~

② $\cot^2\theta = 2\cot\theta$
 ~~$-2\cot\theta$~~ ~~$-2\cot\theta$~~

$6x - 3 = 2x - 4$

$4\cos\theta - 1 = -4$
 $+3 \quad +3$

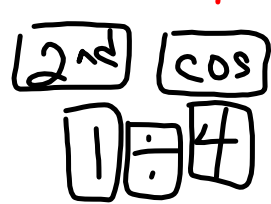
$\cot^2\theta - 2\cot\theta = 0$



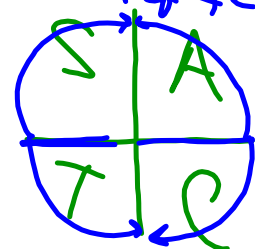
~~$\cos\theta = -1$~~
 $\frac{4}{4} \quad \frac{-4}{4}$
 $\cos\theta = -\frac{1}{4}$

$\cot\theta(\cot\theta - 2) = 0$
 $\cot\theta - 2 = 0$
 $+2 \quad +2$
 $\cot\theta = 2$

$\frac{\cos\theta}{\sin\theta} = 0$



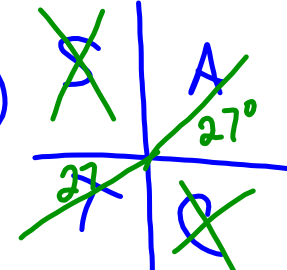
$\cos\theta = 0$
 ref $\theta = 90^\circ$



~~$\frac{1}{\tan\theta} = \frac{1}{2}$~~
 $\frac{2\tan\theta}{2} = \frac{1}{2}$
 $\tan\theta = \frac{1}{2}$
 ref $\theta = 27^\circ$

$\theta = 104^\circ, 256^\circ$

$\theta = 90^\circ, 270^\circ$



$\theta = 27^\circ, 207^\circ$

③ $3 \sec^2 \theta - \sec \theta = 2$

$3 \sec^2 \theta - \sec \theta - 2 = 0$

$3 \sec^2 \theta - 3 \sec \theta + 2 \sec \theta - 2 = 0$

GCF?

GCF?

$3 \sec \theta (\sec \theta - 1) + 2 (\sec \theta - 1) = 0$

GCF?

$(\sec \theta - 1)(3 \sec \theta + 2) = 0$

$\sec \theta - 1 = 0$

$\sec \theta = 1$

$\cos \theta = 1$

ref $\neq 0^\circ$

∅

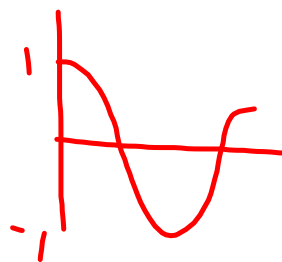
X	A
X	C

$3 \sec \theta + 2 = 0$

$\sec \theta = -\frac{2}{3}$

~~$\cos \theta = -\frac{3}{2}$~~

S	X
A	X



$\frac{-6}{-3 \cdot 2}$

④ $2\csc^2\theta - \csc\theta = 1$

$2\csc^2\theta - \csc\theta - 1 = 0$

$(2\csc\theta + 1)(\csc\theta - 1) = 0$

$2\csc\theta + 1 = 0$ | $\csc\theta - 1 = 0$

$\csc\theta = -\frac{1}{2}$

Flip Fraction

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

No Solution

$\csc\theta = 1$

$\sin\theta = 1$

90° ref $\neq 90^\circ$



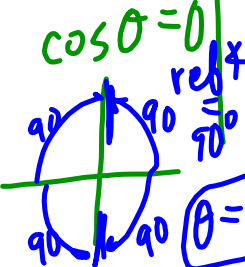
$\theta = 90^\circ$

⑤ $\cot\theta + 3\cot\theta\sin\theta = 0$

$\frac{\cot\theta}{\text{GCF}} (1 + 3\sin\theta) = 0$

$\cot\theta = 0$ | $1 + 3\sin\theta = 0$

$\frac{\cos\theta}{\sin\theta} = 0$



$\sin\theta = -\frac{1}{3}$

~~19°~~ ~~19°~~



$\theta = 199^\circ, 341^\circ$

