	TRIGONOMETRIC EQUATIONS	
	PRINCIPAL SOLUTIONS:-	
Q.20)	Find the principal solutions of $\text{cosec}\, x = -2$	
Sol.20)	$\Rightarrow \sin x = \frac{-1}{2}$ 3rd quadrant, $\sin x = \sin\left(\pi + \frac{\pi}{6}\right)$ $\Rightarrow \sin x = \sin\left(\frac{7\pi}{6}\right)$ 4th quadrant, $\sin x = \sin\left(2\pi + \frac{\pi}{6}\right)$ $\Rightarrow \sin x = \sin\left(\frac{11\pi}{6}\right)$ $\Rightarrow x = \frac{7\pi}{6}$ and $x = \frac{11\pi}{6}$ are the principal solutions	
Q.21)	Find the principal solutions of $\text{cosec}\, x = -2$	
Sol.21)	$\text{cosec}\, x$ $\Rightarrow \sin x = \frac{-1}{2}$ 3rd quadrant, $\sin x = \sin\left(\pi + \frac{\pi}{6}\right)$ $\Rightarrow \sin x = \sin\left(\frac{7\pi}{6}\right)$ 4th quadrant, $\sin x = \sin\left(2\pi + \frac{\pi}{6}\right)$ $\Rightarrow \sin x = \sin\left(\frac{11\pi}{6}\right)$ $\Rightarrow x = \frac{7\pi}{6}$ and $x = \frac{11\pi}{6}$ are the principal solutions	
Q.22)	Find the principal solutions of $\tan x = \sqrt{3}$	
Sol.22)	$\tan x = \sqrt{3}$ 1st quadrant, $\tan x = \tan\left(\frac{\pi}{3}\right)$ $\Rightarrow x = \frac{\pi}{3}$ 3rd quadrant, $\tan x = \tan\left(\pi + \frac{\pi}{3}\right)$ $\Rightarrow \tan x = \tan\left(\frac{4\pi}{3}\right)$ $\therefore x = \frac{\pi}{3}$ and $x = \frac{4\pi}{3}$ are the principal solutions	
Q.23)	Find the principal solutions of, $\sec x = -1$	
Sol.23)	$\sec x = -1$ $\Rightarrow \cos x = -1$ 2nd quadrant, $\cos x = \cos(\pi - 0)$ $\Rightarrow x = \pi$ 3rd quadrant, $\cos x = \cos(\pi + 0)$ $\Rightarrow x = \pi$ $\therefore x = \pi$ is the principal solutions	