Notes Key

Monday, February 22, 2016 8:12 AM

Tips ① Get "sinx" and "cos x"

$\sin(-x) = -\sin x$ ② $\cos^2 x + \sin^2 x = 1$

③ Know your Trig Identities!

① $\frac{1}{1-\sin x}\cdot\frac{(1+\sin x)}{(1+\sin x)} + \frac{1}{1+\sin x}\cdot\frac{(1-\sin x)}{(1-\sin x)}$ $\frac{1}{7} + \frac{2}{x}$

$$\frac{1+\sin x + 1 - \sin x}{(1-\sin x)(1+\sin x)} = \frac{2}{1-\sin^2 x} = \frac{2}{\cos^2 x} = 2\sec^2 x$$

② $\frac{\sin x}{1-\cos x} + \frac{1-\cos x}{\sin x}$

$$\frac{\sin^2 x + (1-\cos x)(1-\cos x)}{(1-\cos x)(\sin x)} = \frac{\sin^2 x + 1 - 2\cos x + \cos^2 x}{(1-\cos x)(\sin x)} = \frac{2-2\cos x}{(1-\cos x)(\sin x)} = \frac{2(1-\cos x)}{(1-\cos x)\sin x} = \frac{2}{\sin x}$$

(1 over the whole numerator)

③ $\frac{1+\cos x}{\sin x} = \frac{1}{\sin x} + \frac{\cos x}{\sin x}$

$= \boxed{\csc x + \cot x}$

!