

200702261141

Name Key

Write these in terms of tangent

$$1) \sin \phi \tan \phi \csc \phi$$

$$(\sin \phi)(\tan \phi)\left(\frac{1}{\sin \phi}\right)$$

$$\left(\frac{\cancel{\sin \phi}}{\cancel{\sin \phi}}\right)\left(\frac{1}{\cancel{\sin \phi}}\right)(\tan \phi)$$

$$\boxed{\tan \phi}$$

$$\left[\csc \phi = \frac{1}{\sin \phi}\right]$$

$$2) \frac{(\sec^2 \phi - 1)(\cot \phi)}{(\csc^2 \phi - 1)}$$

$$\frac{(\tan^2 \phi)\left(\frac{1}{\tan \phi}\right)}{(\cot^2 \phi)}$$

$$\frac{\tan \phi}{\cot^2 \phi} = \frac{\tan \phi}{\frac{1}{\tan^2 \phi}}$$

$$\boxed{\tan^3 \phi}$$

$$\left[\sec^2 \phi - 1 = \tan^2 \phi\right]$$

$$\left[\csc^2 \phi - 1 = \cot^2 \phi\right]$$

$$\left[\cot \phi = \frac{1}{\tan \phi}\right]$$

$$3) \frac{\sin \phi}{\cos \phi} + \frac{\cos \phi}{\sin \phi}$$

$$\tan \phi + \cot \phi$$

$$\boxed{\tan \phi + \frac{1}{\tan \phi}}$$

$$\left[\frac{\sin \phi}{\cos \phi} = \tan \phi\right]$$

$$\left[\frac{\cos \phi}{\sin \phi} = \cot \phi\right]$$

or

$$\boxed{\frac{\tan^2 \phi + 1}{\tan \phi}}$$