

$$2. \quad \tan^2 x - \sin^2 x = \underline{\underline{\tan^2 x \sin^2 x}}$$

$$\tan^2 x \sin^2 x$$

(15)

$$\sin^2 x + \cos^2 x = 1$$

$$\sin^2 x = 1 - \cos^2 x$$

$$\tan^2 x (1 - \cos^2 x)$$

$$\tan^2 x - \tan^2 x \cos^2 x$$

(7)

$$\tan^2 x - \frac{\sin^2 x}{\cancel{\cos^2 x}} \cdot \cancel{\cos^2 x}$$

$$\tan^2 x - \sin^2 x \quad \checkmark$$

$$3. \quad \underline{\underline{\frac{2 - \cos^2 x}{\sin x}}} = \csc x + \sin x$$

$$\frac{2}{\sin x} - \frac{\cos^2 x}{\sin x}$$

(15)

$$\sin^2 + \cos^2 = 1$$

$$\cos^2 = 1 - \sin^2$$

(4)

$$2 \csc x - \frac{1 - \sin^2 x}{\sin x}$$

$$2 \csc x - \frac{1}{\sin x} + \frac{\sin^2 x}{\sin x}$$

(4)

$$\csc x - \csc x + \sin x = \csc x + \sin x \quad \checkmark$$