

8. KEYH $\frac{3\cos^2 x + 2\cos x - 1}{\sin^2 x} = \frac{1 - 3\cos x}{\cos x - 1}$

$$\frac{(3\cos x - 1)(\cos x + 1)}{1 - \cos^2 x} \xrightarrow{(15)} \frac{(3\cos x - 1)(\cancel{\cos x + 1})}{-1(\cancel{\cos x + 1})(\cos x - 1)} \xrightarrow{\text{DnTS}} \frac{3\cos x - 1}{-1(\cos x - 1)} = \frac{-1(3\cos x - 1)}{\cos x - 1} = \frac{-3\cos x + 1}{\cos x - 1} = \frac{1 - 3\cos x}{\cos x - 1} \checkmark$$

9. $\frac{1 - \cos^2 x}{\sec^2 x - 1} = \cos^2 x$

$$\frac{\sin^2 x}{\tan^2 x}$$

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

(16) $\tan^2 x + 1 = \sec^2 x$
 $\tan^2 x = \sec^2 x - 1$

$$\frac{\sin^2 x}{\sec^2 x} \xrightarrow{(7)} \frac{\cancel{\sin^2 x} \cdot \frac{\cos^2 x}{\cancel{\sin^2 x}}}{\cos^2 x} \checkmark$$