(11) $a\sin\theta + b\cos\theta = c$ to prove $a\cos\theta - b\sin\theta = \sqrt{a^2+b^2-c^2}$

$(\text{given})^2 + (TP)^2$

$= (a\sin\theta + b\cos\theta)^2 + (a\cos\theta - b\sin\theta)^2$

$= a^2\sin^2\theta + b^2\cos^2\theta + 2ab\sin\theta\cos\theta + a^2\cos^2\theta + b^2\sin^2\theta - 2ab\sin\theta\cos\theta$

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$= a^2(\sin^2\theta + \cos^2\theta) + b^2(\sin^2\theta + \cos^2\theta)$

$= a^2 + b^2$

$\therefore (a\sin\theta + b\cos\theta)^2 + (a\cos\theta - b\sin\theta)^2 = a^2 + b^2$

$c^2 + (a\cos\theta - b\sin\theta)^2 = a^2 + b^2$

$\Rightarrow (a\cos\theta - b\sin\theta)^2 = a^2 + b^2 - c^2$

$\Rightarrow a\cos\theta - b\sin\theta = \sqrt{a^2+b^2-c^2}$

(12) $LHS = \dfrac{1+\sec\theta - \tan\theta}{1+\sec\theta + \tan\theta}$

$= \dfrac{(\sec\theta - \tan\theta) + (\sec^2\theta - \tan^2\theta)}{1+\sec\theta + \tan\theta}$

$= \dfrac{(\sec\theta - \tan\theta) + (\sec\theta - \tan\theta)(\sec\theta + \tan\theta)}{1+\sec\theta + \tan\theta}$

$= \dfrac{(\sec\theta - \tan\theta)(1 + \sec\theta + \tan\theta)}{(1+\sec\theta + \tan\theta)}$

$= \dfrac{1}{\cos\theta} - \dfrac{\sin\theta}{\cos\theta}$

$= \dfrac{1-\sin\theta}{\cos\theta} = RHS$