7. 1) $\dfrac{\sin A}{\operatorname{cosec} A} + \dfrac{\cos A}{\sec A} = 1$

   2) $\dfrac{\sec A}{\cos A} - \dfrac{\tan A}{\cot A} = 1$

   3) $\dfrac{1}{1+\sin^2 A} + \dfrac{1}{1+\operatorname{cosec}^2 A} = 1$

8. 1) $\dfrac{\tan A}{1-\cot A} + \dfrac{\cot A}{1-\tan A} = \sec A \operatorname{cosec} A + 1$

   2) $\dfrac{1}{1+\tan^2 A} + \dfrac{1}{1+\cot^2 A} = 1$

9. $\dfrac{\cos A}{1-\tan A} + \dfrac{\sin A}{1-\cot A} = \sin A + \cos A$

10. $\tan A\sqrt{1-\sin^2 A} = \sin A$

11. $\dfrac{\sec A + \tan A}{\operatorname{cosec} A + \cot A} = \dfrac{\operatorname{cosec} A - \cot A}{\sec A - \tan A}$

12. $\dfrac{\operatorname{cosec} A}{\operatorname{cosec} A - 1} + \dfrac{\operatorname{cosec} A}{\operatorname{cosec} A + 1} = 2\sec^2 A$

13. $\dfrac{1}{1+\sin A} + \dfrac{1}{1-\sin A} = 2\sec^2 A$

14. $\dfrac{1}{\operatorname{cosec} A - 1} - \dfrac{1}{\operatorname{cosec} A + 1} = 2\tan^2 A$

15. $\dfrac{\sin A}{1-\cos A} + \dfrac{1-\cos A}{\sin A} = 2\operatorname{cosec} A$

16. $\dfrac{\tan A}{\sec A + 1} - \dfrac{\sec A - 1}{\tan A} = 0$

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

18. $\dfrac{\cot A + \tan B}{\cot B + \tan A} = \cot A \cdot \tan B$

19. $\sqrt{\dfrac{1-\sin A}{1+\sin A}} = \sec A - \tan A$

20. $\sqrt{\dfrac{\sec A + 1}{\sec A - 1}} = \cot A + \operatorname{cosec} A$

21. If $\cos A + \sin A = \sqrt{2}\cos A$, prove that, $\cos A - \sin A = \sqrt{2}\sin A$